

# AMERICAN NURSERYMAN

*The Nurseryman's Forte: To Make America More Beautiful and Fruitful*

APRIL 1, 1949

V. 89, # 7



*Lagerstroemia Indica*

## SEEDS

TREE—SHRUB—PERENNIAL  
FLOWER—VEGETABLE

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Eutin	400	300	1100 1700
Floradora	...	...	1300
Gloria Mundi	400	2600	1100 500
Ideal	100	80	400 300
Kirsten Poulsen	...	...	400 400
Lafayette Improved	100	200	1300 900
Red Ripples	240	300	250
Sparkler	200	1600	400 200
Triomphe Orleansais	...	900	500 400
Pink Shades			
Cameo	300	400	300 900
Chatillon	70	260	300 100
Cheer	...	...	400 350
Ellen Poulsen	200	200	400 100
Else Poulsen	600	800	500 600
Gruss an Aachen	...	...	800 2000
Salmon Shades			
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Golden Salmon Superior	200	100	300 300
Orange Triumph	...	100	600 300

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(Mostly Own-Root)

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200 Flower of Fairfield	No. 1 1/2 25.00
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6100 Paul's Scarlet	No. 1 40.00
1700 Paul's Scarlet	No. 1 1/2 35.00
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1200 American Pillar	No. 1 35.00
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600 Gardenia	No. 1 1/2 20.00
300 White Dorothy Perkins	XX 35.00
900 White Dorothy Perkins	No. 1 22.00
400 White Dorothy Perkins	No. 1 1/2 18.00



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# Mount Arbor Nurseries

ESTABLISHED 1875

• SHENANDOAH IOWA •



# AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

*The Nurseryman's Forte: To Make America More Beautiful and Fruitful*

VOL. LXXXIX, No. 7

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Forms for the April 15 issue will close Monday, April 4  
Mail copy to arrive at Chicago by that date—no later.

# STOCK LIST

The following stock is available for immediate delivery, and we shall be pleased to quote our best prices in accordance with your needs if you will advise us the items in which you are interested.

## Shrubs

	3 to 4 ft.	2 to 3 ft.	18 to 24 ins.	12 to 18 ins.		3 to 4 ft.	2 to 3 ft.	18 to 24 ins.	12 to 18 ins.
Cornus Alba Sibirica	X				Lonicera Tat. Rosea	X			
Cornus Stolonifera	X				Philadelphus Coronarius	X			
Forsythia Intermedia	X	X			Spiraea Arguta	X	X	X	
Forsythia Suspensa		X	X		Spiraea Thunbergi	X	X		
Forsythia Viridissima	X	X			Symphoricarpos Vulgaris	X	X		
Hibiscus Anemonaeflorus	X		X		Syringa Vulgaris				X
Hibiscus Lucy	X		X	X	Viburnum Dentatum			X	X
Hibiscus Rubis	X		X	X	Viburnum Opulus			X	
Hydrangea A. G.				X	Weigela Rosea	X			
Lonicera Chrysantha	X	X			Weigela Variegata	X			

## Hedging

Berberis Thunbergi, 2-yr. seedlings, 18 to 24, 12 to 18, 9 to 12 and 6 to 9 ins.

Berberis Thunbergi, 3-yr. transplants, 2½ to 3 and 2 to 2½ ft.

Berberis Thunbergi Atropurpurea, 2 to 2½ ft. and 18 to 24 ins.

Ligustrum Ibota, 18 to 24 and 12 to 18 ins.

## Fruit Trees

### APPLES

	1 to ¼-in.	1-in. up 1¼-in.	1½-in. up 1¾-in.
Baldwin	X	X	X
Early McIntosh	X		
Grimes Golden		X	X
Red Delicious	X	X	X
Red Gravenstein	X	X	X
Red Jonathan	X	X	X
Red McIntosh	X	X	X
Red Rome Beauty	X	X	X
Red Stayman Winesap	X	X	
Red Spy	X	X	X
R. I. Greening	X	X	X
Yellow Delicious	X	X	X
Yellow Transparent	X	X	X
Dolgo Crab			X
Hyslop Crab		X	X

### PEARS

Bartlett		X	X
Beurre Bosc			X
Clapp's Favorite		X	X
Kieffer		X	X
Seckel			X
Sheldon			X

### DWARF PEARS

	5/8-in.	1/2-in.	3/8-in.
Bartlett		X	X
Clapp's Favorite			X
Duchess	X	X	X
Kieffer	X	X	X

### CHERRIES

	1½-in.	1¾-in.	1½-in.
Sweet, 1-yr.			
Black Tartarian	X	X	X
Sour, 2-yr.	1-in.	1¼-in.	1½-in.
Early Richmond	X		
Montmorency	X	X	X

### PEACHES

	1½-in.	1¾-in.	18 to 24 ins.
Elberta	X	X	X
Golden Jubilee	X	X	X
Halehaven	X	X	X
J. H. Hale	X	X	X

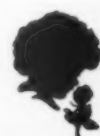
### FRUIT TREE SEEDLINGS

Apple, 3/16-in., straight root

**C. R. BURR & COMPANY, Inc.**

Manchester, Conn.

"Growing Since '98"



## AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*

Joan L. Kilner, *Assistant Editor*

### Editorial

#### DISINFLATION.

When the public was confronted with problems due to rising prices, government economists and others talked about a coming "readjustment" and saw no early reason for so drastic a process as a depression. Even the word "deflation" was eschewed as much as inflation was previously feared. Now the latest term to come forth at Washington, from the chief economic adviser of the administration, is "disinflation."

This word was used, the adviser explained, because he believed that inflationary forces are waning, but that the country is not in the grip of deflation or the beginning of a depression.

Actually the situation currently is one of change, as everyone knows. Changes, in degree and type, vary from industry to industry, from one business enterprise to another. Some previously underwent more change than others in consequence of the war and other recent factors. The reaction of the pendulum consequently is different in extent.

For nearly twenty years government economists and others have been trying to find levers by which the business trend might be shunted upward or downward, as conditions might warrant, so as to attain a desirable equilibrium, either in employment or in prices. First, attempts were made to push them up, by increasing spending or curtailing production. Then the war did the job with a vengeance. But a postwar reaction was expected, which brought another artificial shove upward, bringing a threatened spiral that is now weakening if not reversing.

The nation's economy, however, is not a matter of mass momentum, even in the extremes of depression and inflation. It is composed of multitudes of factors, industry by industry and business by business. While one factory produces, another is shut down. While one merchant thrives, another goes into bankruptcy. Even the individual wage earner influences the national picture by the effort he puts forth to hold his job—called productive efficiency.

In a country as large as ours, one section varies in activity from another. Weather aids one and brings disaster to another, as this winter

demonstrated. The many minute influences that produce the total effect are as many as there are business enterprises, perhaps almost as many as there are workers.

While the national picture may be presented as the result of these influences, it is therefore scarcely possible to ascribe a general influence controlling the current trend. New words do not make the task easier.

Each nurseryman may confront a different business condition, because of the character of his community, its location, his operations, local labor supply, etc. Each of us can do best for the nation's economy by gauging our activities by our own local opportunities, leaving others to seek new words to describe natural processes which are not too clear.

#### WINTER INJURY.

The accounts of the nurserymen on the Pacific coast as to the effects of the January freezes reveal vagaries as unaccountable as those that appeared in the injuries to evergreens in the north central states last year.

In some cases small shrubs in cans were frozen back or killed, with the exception of occasional plants here and there in a block which remained living and green. Some different conditions in that plant or in the soil in its can gave it greater resistance to the cold than its neighbors.

Under lath quite varied results were noted. Sometimes the shelter gave enough protection; sometimes it did not. Plants in pots or a bench sometimes were killed while others on the ground beneath the bench survived—possibly the protection from cold air at the base of the pots was responsible.

Comparison in the effects of the cold in different nurseries was difficult, if not impossible, because of the difference in temperature, exposure, wind and other factors. A few degrees make a great difference when just below the freezing point, and temperatures ranged from 14 to 27 degrees in nurseries a few miles apart.

Damage was largely to young plants or to those of tender species, though in some instances large specimens were killed. Not all of the stock was lost entirely, but could be expected to regain its top growth; even so, the nurserymen lost immediate sales and will have to carry the stock along another season before recovering their investment.

### The Mirror of the Trade

Regardless of the contrast between the extremely severe winter conditions that injured evergreens in the north central states last year and the milder freezes that did damage on the west coast, the fact remains that too little is known about the factors which affect hardiness in plants. It is a fascinating subject for the investigator, though a sad one to the grower who suffers losses. Both are interested in much further research in this regard.

#### THE BEAUTIES OF NATURE.

When a nurseryman sojourns over winter in a warmer section of the country, he is more likely to wax enthusiastic about the beauties of nature than when he is at home and at work. Perhaps it is the contrast in conditions; perhaps it is the greater color of bloom, or perhaps it is the variety of growth, depending on the section of the country. Or it may be that leisure to observe imprints deeper impressions.

Some plantmen, however well versed in nature in their home communities, demonstrate that enthusiasm perennially. They do much for their profession aside from their commercial operations; they inculcate aesthetic appreciation in their neighbors and usually are to the fore in civic betterments.

Yet they are not so numerous as they should be. The reason is not so much lack of plant knowledge, though unfortunately that occasionally is responsible, as a casual or even reticent attitude toward enthusiasm on the subject. They may be affected by the after-dinner orators who dwell at length on horticultural beauty without being able, actually, to tell an ash from an elm tree.

Yet the public needs sincere leaders and teachers in the appreciation of nature, just as much as in the appreciation of art, music and literature. The steppingstones are those of knowledge. This the average nurseryman has. If he could impart some of his keener observation of nature, of his life's experience and lore, the public would be the better for the instruction. And a better informed public is always a public of better buyers.

TWO nurseries, one at Lafayette and the other at Bloomington, Ind., for ornamental and forest planting stock are being started by VanArsdel Forests.



# Apple Tree Problems in the Nursery

By M. B. Cummings

There are many problems involved in the growing of apple trees in the nursery. To solve them all in due time and without loss is a problem in itself. Experience, although impressive, is sometimes an expensive teacher. Often, with this idea in mind, a few hints may be of much value. This article is written so that steps may be taken in advance to guard against loss. Local disaster often can be forestalled if attention is directed beforehand in anticipating these problems as well as in knowing how to solve them after they arrive.

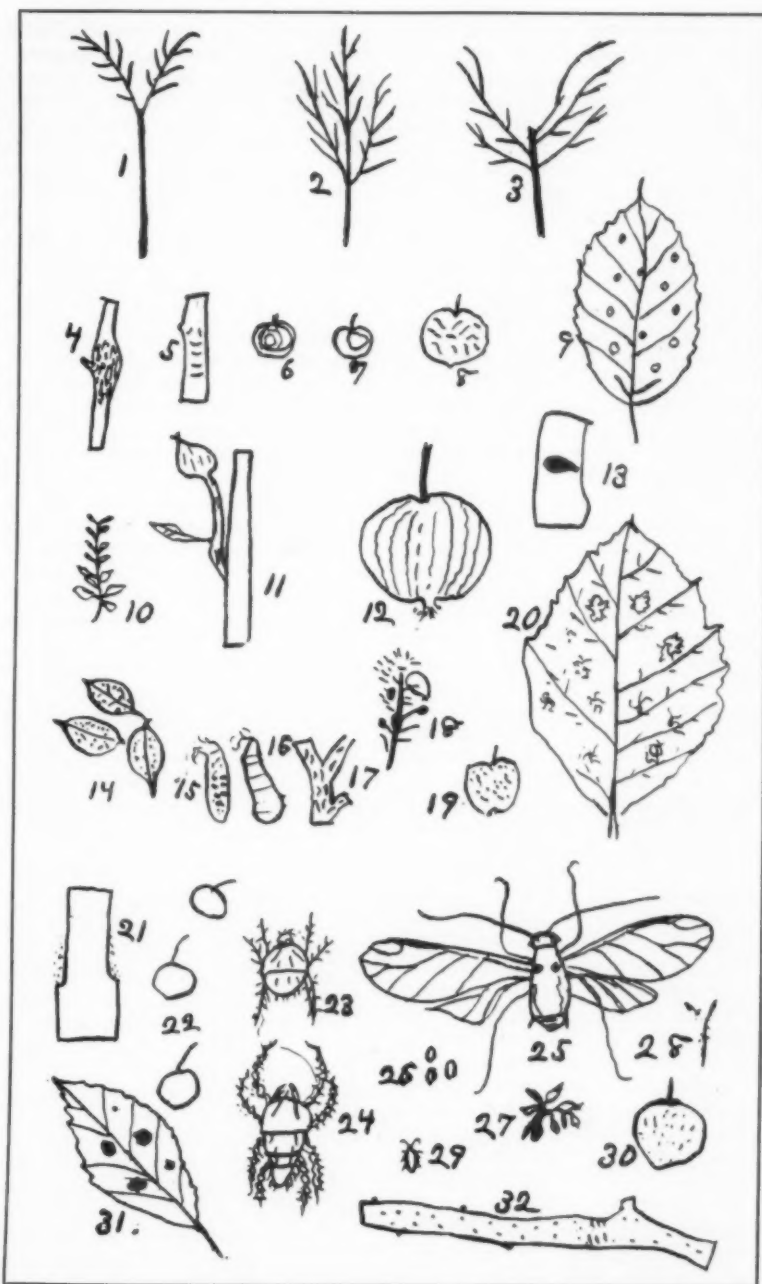
There are two groups of questions about apple trees in the nursery. One is concerned with the shape and strength of the trees; the other relates to their health and is concerned with the insects and diseases to be combated.

We shall consider first the matter of shape and strength of specimens. A tree needs to be well grown in the nursery to make a good tree in the orchard. If a tree is poor in the one place it is sure to be poor in the other. Good shape and a strong framework are imperative. A tree may be productive if it has a crooked trunk, and it may bear early with a curved stem, but if it is weak at the crotch or one-sided, these attributes may be accentuated later on and give dissatisfaction. In this connection, one should recall that the nurseryman wants a satisfied customer.

In the illustration, figures 1, 2 and 3 show the important points in shaping trees. It is important to avoid a crotch or a forked head. If one occurs, cut out or cut short one of the two spreading limbs near the top of the tree; otherwise it will split down and be spoiled. The weakness of a bifurcating top can be forestalled if taken in time.

A frame for the small tree is shown in figure 2, with the main limbs well distributed to give a strong balanced top. Such a condition is ideal and worth striving for. Good trees are often spoiled by a wrong cut or by the taking out of the leader, as shown in figure 3. Here the tree loses its head and can never regain or recover it. A tree without a head is nearly worthless. Its good looks are gone, as well as its salability and a large part of its usefulness. It is important to know where and how to make the cuts in nursery pruning operations. One needs to be alert to harmful pruning and to be sure not to

[Continued on page 70.]



Legends to diagram: 1, forked treetop equals a poor tree; 2, well shaped tree with fine framework; 3, a tree that lost its head, leader cut out; 4, black rot canker on branch; 6, 7, 8, successive stages of black rot on apples; 9, black rot canker on leaf, a frog-eye; 10, twig blight—tip black, midway brown, base green; 11, blighted spur and apple; 12, blighted and blackened fruit; 13, elongated scar with blight on trunk; 14, oyster shell on leaf; 15, an inverted scale showing eggs; 16, exterior of scale showing shape and lines; 17, scale on twig; 18, cedar apples on red cedar, one stage of apple rust fungus; 19, a rusted apple, rough skin and little points; 20, rust stage on hawthorn leaf; 21, European red mite eggs on apple twig; 22, detached eggs of mite with appendage; 23, newly hatched red mite; 24, adult red mite; 25, rosy aphid; 26, eggs of rosy aphid; 27, leaves rolled by rosy aphid; 28, eggs of rosy aphid on twig; 29, young bug of rosy aphid; 30, apple scarred by rosy aphid; 31, black scab spots on apple leaf; 32, scab lesion on apple twig.

# Plants Landscape Architects Prefer

By Donald W. Bush

Many phases of a landscape architect's work would not be interesting to a group of nurserymen, and many of the problems of a nurseryman might be a little boring to the average landscape architect. Each travels in his own sphere, but at one point at least their fields overlap. They are both interested in plants.

We professional landscape architects are spread rather thinly over the midwest and consequently are not necessary to the nurserymen's success, but nurserymen are essential to the business of the landscape architect, who must have plant material to carry out his plans. The kind of plants he may use depends upon the kinds, sizes and quality the nursery can supply.

The ability to sell his wares is as important to a landscape architect as to a nurseryman. They simply sell different products. All the landscape architect has to sell is his advice, and he is able to spend his time in preparing plans and giving an amount of study to a problem for which it would be difficult for the nurseryman to receive payment by the client. We landscape architects spend part of our time in helping you sell trees and shrubs, and I welcome the chance to meet with you to talk about them.

What kind of plants do most landscape architects prefer?

First, we want quality stock. Our clients have invested in our services in order to secure superior results. We have taken measurements, studied architects' plans, presented ideas at conferences with clients and prepared planting plans, and time, money and effort would be largely wasted if the plant material were weak, scrawny and diseased when planted. If losses are high, we have lost as much as the nurseryman in the disappointment of the client. So well grown stock, planted far enough apart to allow for normal growth, properly pruned at tops and roots and free from disease is essential to us.

Price is, of course, an item which cannot be neglected. In order to secure fair competition, bids are taken, unless the client expresses his own preferences. But few planting contracts are decided entirely on a price basis, and the quality of the stock offered is always an important factor

in the letting of the contract. There will always be plenty of jobbers growing and marketing spindly spiraeas and worn-out roses, but the landscape architect is never interested in such so-called bargains. The best plants that you can produce will usually be selected, provided the price is within reason.

Second, what sizes do we like? This is not so easy to answer, as many factors are involved. The clients' preferences make a great deal of difference. Some owners are impatient and wish to secure a satisfactory immediate effect. This means the use of large specimen material. Common sense is a good guide in judging the sizes to be used. We usually caution the client against using too large stock. The older the plants, the greater the shock in transplanting, the greater the loss and the fewer the years of satisfactory service given.

Derrick-size trees are often worth the extra expenditure to produce immediate effect, but our experience indicates that even these should not be planted too large, except in unusual cases. We do not recommend planting trees above ten inches in trunk diameter and prefer 6 to 8-inch sizes. We have found that usually trees above ten inches in diameter do not recover from the shock of moving so well as younger, smaller trees.

The same rule applies to evergreens and shrubs. Young, vigorous plants produce a much more satisfactory effect in the end than large stock moved at much greater expense. Naturally, the sizes should be balanced to produce a uniform effect. We warn clients that shrubs will not give a proper effect until about the third season after planting. We like to space plants so that they will not become crowded and require major pruning for a number of years after planting.

This brings us to the third preference of landscape architects. Plants grow so quickly and grow out of scale in such a short time that we like slow-growing plants, in spite of the increased original cost to the client. We are constantly using our influence to help you sell your expensive yews, oaks and maples, instead of Tatarian honeysuckle and Chinese elms. We do this not necessarily to help you, but because we consider the more permanent plants a better investment for our clients. This is particularly

true of plants for foundation planting. We feel that a house can be easily buried behind too much large planting.

The fourth effect that we like to secure with plants is harmony and unity. While we are not entirely opposed to plants with red or silver leaves, we think they should be used most carefully. They should be so located that they will not form too violent contrasts with the surrounding material. We also are not opposed to the limited use of extremely large-leaved or extremely small-leaved plants, but we believe that neither appears to advantage if planted together. For instance, hydrangeas backed by tamarix would be unattractive, as well as red barberry interplanted with kerria. The ideal is to select plants that will blend into each other to secure a unified natural landscape picture, rather than a series of unrelated spots, each vying with the other for the owner's attention.

Trees are important to landscape architects. They are more permanent and require less maintenance than shrubs or flowers. Often park plantings are made almost entirely of trees. During our hot summers, no other planting can take the place of shade trees. Since each kind of tree has its desirable qualities and its weak points, it is hard to select kinds that will fit any situation. The elm, on account of recent diseases, has lost its place of leadership, and only the hybrid elm is now recommended. Since we favor slow-growing trees, the oak, hard maple, hackberry, ash and linden are the principal kinds we use. We consider the pin oak one of the most valuable single trees for general planting in the middle west.

Among the ornamental trees, the redbud perhaps heads the list. Haws, crab apples and magnolias are always used on properties of any size. The varnish tree and the tree lilac are also dependable. Birches and willows, although temporary trees in this region, are considered worth the additional care if the client will supply it. Naturally, these trees grow more satisfactorily and are more attractive if planted close to water.

We think that coniferous evergreen plantings are most satisfactorily used in the midwest to supplement other planting of deciduous trees and shrubs. There is nothing more monotonous than an entire property

[Continued on page 54.]

Address presented at a meeting of the Western Association of Nurserymen by Donald W. Bush, Hare & Hare Landscape Architects, Kansas City, Mo.

# Industrialization in Practice

## PART II

By Charles W. Hetz

Field row planting presents a major problem in the spring when added to the regular harvest of nursery stock and putting in the necessary farm crops. Hand planting, even in trenched rows, is a very slow process.

Many nurseries have tried planters, but for some reason have failed to obtain satisfactory results. Our planter was made from two one-row New Idea planters, used one year, torn down and rebuilt again, and now does a really fine job. Small packer wheels were discarded and spring drags substituted. All the weight of the planter and its load was then put on the main wheels, which in turn are used to pack the row.

A Cletrac crawler tractor with a gasoline motor used as power is of tremendous importance, for the track firms the soil for the planting shoe and at the same time the cleats leave the soil chopped up for the spring drags, but most important is the flexibility of speed. Dropping down into low gear with the throttle cut down permits planting as close as six inches. The crawler also makes possible short close turns in order to come back alongside for the return rows.

Plants from three to twenty-four inches can be planted. The larger ones are guided back through the packer wheels by means of shields. The shoes cut to a maximum depth of nine inches. This planter has a carrying platform large enough to hold material for long rows. Sometimes when operating and covered with the larger evergreens the end takes on the appearance of a small load of hay. This platform extends out over the planter's heads and prevents trash from falling on them. Six men operate this planter, putting in 1,500 to 5,000 pieces per hour. Small liners closely planted go in faster than large liners, which require accurate spacing.

Another possible practice that pays off is to plant small once-transplanted liners close in field rows, then two years later run these with a digger and thin the field to proper spacing, thereby making use of the open spacing while plants are small. Our planter also handles these twice-transplanted items. All soil is tilled ahead of planting, making the best soil condition possible. Tillage also mixes the manures we use and

theoretically kills a percentage of white grubs.

This equipment makes possible all the advantages of 2-row tools, such as cultivators, sprayers, hauling out trailer, diggers, etc. These will be explained more in detail later.

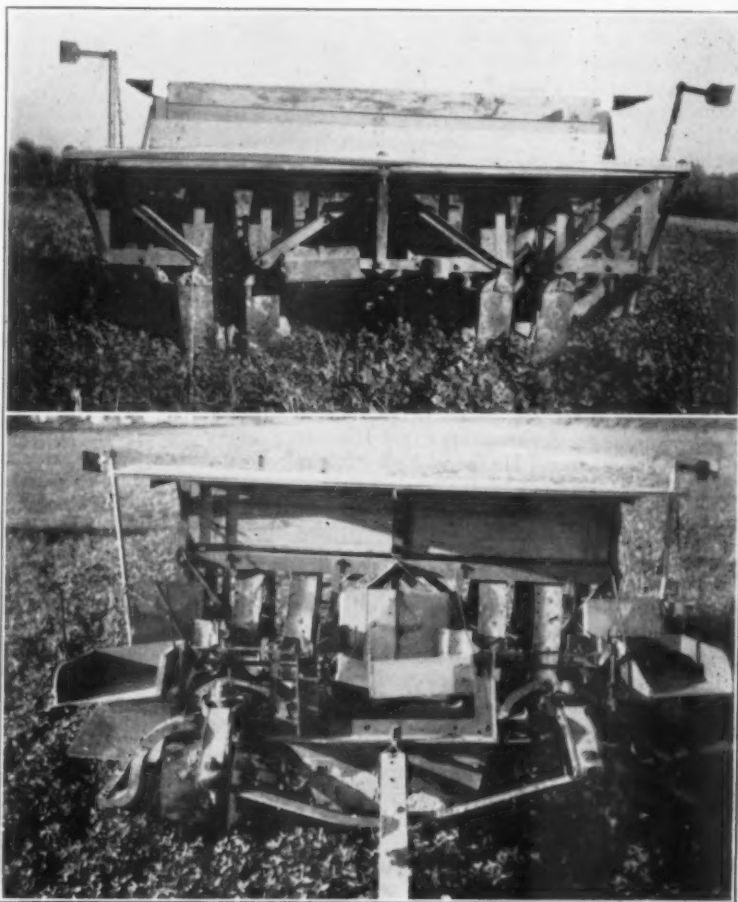
Without doubt this planter has been responsible for our continually expanding acreage and made possible planting throughout the war years when labor was not available.

We should make the following comparison on labor reaction: A large crew of hand planters, with some loafers and some agitators among them, is hard to handle and three times has caused us trouble. The crew on the planter is small, and the workers are all too busy to cause trouble. In our case we use school boys who work after school and on Saturdays, and with this small crew working these hours we planted forty acres last spring.

PRESIDENT of the Black Hills Florists' Association, recently organized at Rapid City, S. D., is Paul Wilkinson. Paul's Greenhouses & Nursery, Pierre.

RECOVERING from losses incurred when her home, office, plants and bulbs were destroyed by fire last year, Mrs. C. H. Smith, Smith's Floral Gardens, Baton Rouge, La., has built a small house with an adjoining office. Many friends in the nursery trade sent Mrs. Smith plants to help her rebuild her stock.

PROBLEMS facing commercial strawberry growers were the subject for a talk given by W. Lee Allen, W. F. Allen Co., Salisbury, Md., at the second annual Connecticut strawberry meeting held March 4 at the Brownstone restaurant, Portland, Conn., under the direction of the agricultural extension service.



Top: 2-row Planter, Back View. Bottom: Front View.



# Canadians Meet at Toronto

By L. C. Keith

Members turned out in full force for the twenty-sixth annual meeting of the Canadian Association of Nurserymen March 3 and 4 at the Royal York hotel, Toronto, Ont., increasing attendance nearly fifty per cent over the meeting of last year, at which all Canadian nurserymen's groups united to form one organization. Although the majority of the 175 nurserymen present at this year's convention were from Ontario, representatives came from Quebec and all the prairie provinces.

Spencer McConnell, McConnell Nursery Co., Port Burwell, Ont., was unanimously reelected president. Also reelected were J. A. Aitken, Rosehall Nurseries, Ltd., Brantford, Ont., vice-president, and L. F. Burrows, Ottawa, secretary-treasurer. Those elected to the board of directors included J. V. Stensson, Sheridan Nurseries, Toronto, Ont.; Harry Endean, Endean Nurseries, Richmond Hill, Ont.; John Connon, John Connon Nursery, Waterdown, Ont.; W. B. Wellington, Stone & Wellington, Toronto, Ont., and T. A. Torgeson, Prairie Nurseries, Ltd., Estevan, Sask.

The morning session the first day was for voting members only. President Spencer McConnell reviewed activities of the past year, reporting considerable advancement both in interest and membership. One of the major projects was the 2-day short course held at Ontario Agricultural College, Guelph. Mr. McConnell urged nurserymen to keep more closely in touch with the Dominion and provincial departments of horticulture because these departments could be of great assistance. He mentioned the revisions suggested by the standards committee and the need to adhere to the standard grades and pointed out the importance of the research committee.

Stating that the buyers' market was over and that surpluses had begun to appear in some lines, the president warned against cutting prices and urged that methods be kept sound and fair prices be maintained.

He suggested that since the association was now national in scope other cities in the east and west might be considered as convention headquarters.

Tribute was paid to the late Sen. E. D. Smith, honorary president of the association.

Illness kept Secretary-treasurer

L. F. Burrows from attending the convention. His report, given by Robert Burns, showed that during the year members had been informed on matters such as customs, tariffs and rail and express rates through circulars and direct correspondence. The report stated that the period of free spending was over, and it was again necessary to sell. The fruit industry is enjoying prosperous years, but the United Kingdom and other foreign markets which had before the war absorbed fifty per cent of all

dealt with the cooperation of the nurserymen with the department of agriculture to make available better strains of propagating material and to develop control measures for the virus diseases that are becoming more serious.

Dr. J. S. Shoemaker, head of the department of horticulture, Ontario Agricultural College, discussed the success of the nurserymen's short course held at the college during the summer, stating that those who attended benefited not only from the lectures but also from meeting other nurserymen on the campus. Another course will be held this summer.

Prof. F. L. O'Rourke, coordinator of the course in nursery and landscape management, Michigan State College, East Lansing, talked on new methods of plant propagation that had worked, as he said, here and there, but that were not proved generally as yet.

Cuttings must receive optimum care, he said, suggesting that two sections be beneath sand and the other section be exposed to the air. The greater the food reserve the more roots there will be, he said. If leaves are left on, they will transpire more water than the base can absorb. Because of this, leaves are sometimes trimmed. Professor O'Rourke recommended humidifying the air in order to decrease watering, stating that if the air could be kept humid without wetting, rooting could be achieved in half the time that it took in a dry greenhouse.

As an example, he suggested the mist system. With it, watering is not needed so much. There were three methods: A centrifugal humidifier, a compressed air system or a hooking of direct nozzles to the water line. The objection to the last method is that the line might clog eventually.

In the mist system the ventilators are closed at all times. Cuttings do not suffer as long as the air is humid. In using nozzles the distance between them must be determined by trial and error. On cold winter nights and hot summer nights more nozzles would be needed. Without light there is difficulty in obtaining humidity, and below the ground, lights proved necessary. Professor O'Rourke suggested 400 to 500 candle power as satisfactory for cuttings. Underground or in a dark building, it is not necessary to humidify the air,

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Spencer McConnell.

apples are now closed. It was also pointed out that fifty per cent of tender fruits were processed. Until this year stocks were low, but there is now a heavy carry-over. Mr. Burrows included these facts so that nurserymen might adjust their businesses to achieve the most success under present conditions.

Reports from various committees concluded the morning session.

President McConnell began the open meetings held in the afternoon by welcoming the nurserymen to the convention and reviewing the activities of the meeting of the recent Canadian Horticultural Council. One of the subjects under consideration was the plant patent act. Last year this act had been endorsed by the association. However, as the entire florists' industry was not conversant with it, the matter had been held over, to come up again this year.

Other topics discussed were resolutions from British Columbia that



# Killing Weeds with Mineral Spirits

By J. H. Stoeckeler

In the past few years forest nurserymen have had much success in killing weeds in conifer seedbeds and transplants by the use of petroleum products known as "mineral spirits."

These materials are normally used in dry cleaning, but have been discovered to be useful as selective herbicides in fields of carrots and parsnips and with certain evergreens. Wisconsin cranberry growers are also using them to kill weeds.

The materials can be purchased from bulk dealers of gasoline and oil and have various trade names, such as Stanisol, Sovasol No. 5, Stoddard Solvent, Varsol, Sohio weed killer, etc. All of the afore-mentioned products have been used successfully in weed control by one or more nurserymen. They appear to kill weeds with little or no damage to most evergreens, providing proper dosages are used and as long as the content of aromatic hydrocarbon is in the range of about ten to twenty per cent.

The materials are usually applied full strength as a fine, mistlike spray and can be applied either with a 3-gallon continuous-pressure garden sprayer or larger power spray rigs equipped with nozzles, spaced about eighteen inches apart, on a boom about twenty inches above the surface of the beds. Three or four sprayings per growing season largely eliminate hand weeding. A bit of "mop-up" hand weeding is sometimes required after spraying to remove the few larger or more oil-resistant weeds not killed by spraying. Such supplementary weeding, however, involves only about eight to ten man-hours per acre, or ten per cent of the time required for weeding done exclusively by hand. Savings in weeding costs in seedbeds by use of mineral spirits rather than by hand will amount to fifty or sixty per cent. In some nurseries the saving has amounted to eighty per cent.

The sprays have been reported as used in dosages ranging from fifteen to 150 or more gallons per acre. The usual dosages in those nurseries where large-scale spraying is done range from twenty-five to about ninety gallons per acre. With the low dosage of from twenty-five to forty gallons per acre, weeds must be sprayed when small, preferably when

most of them are under one inch in height; otherwise, the percentage of weed kill is low. The larger the weeds, the more oil it requires to kill them and the greater is the risk of oil burn on the trees.

In the southern nurseries which are growing loblolly, longleaf and shortleaf pines, satisfactory weed control with no appreciable oil injury to the trees is being obtained with dosages of from fifteen to forty gallons per acre. The sprays have been used on an extensive scale there for several years.

In the eastern nurseries, in the middle west and in the lake states somewhat higher dosages, usually ranging up to from fifty to seventy-five gallons per acre and sometimes up to 100 gallons, have been used successfully on seedbeds or transplants of Norway pine, jack pine and ponderosa pine. Such treatments gave up to eighty to ninety-five per cent weed kill with little or no mortality or injury to the pines.

All conifer species or age classes, however, do not react the same. Some are more susceptible than others to injury by the oil sprays. Thus, it would be wise to test the specific spray materials in one's own nursery on a small scale, meanwhile making close observations for a period of at least several weeks to determine if any tree injury or mortality occurs from the dosage used on specific

species or age classes and in different seasons. For preliminary trials, a 2-quart piston-type hand sprayer or a 3-gallon continuous-pressure garden sprayer will be satisfactory. Initial treatments should be limited to a planting of from ten to forty square feet of any one species. The sprayed area should be marked with stakes and near-by untreated areas used for comparison of weed kill and for observation of any possible adverse effect of the treatment on the trees.

The results of preliminary experimental trials at the Hugo Sauer nursery, Rhinelander, Wis., in 1947 were reported briefly in the American Nurseryman for November 1, 1948. In those tests, mineral spirits were found satisfactory, but products containing 2,4-D were found to cause serious damage or mortality to the evergreens. Since 1947, additional experimentation with other species has resulted in more information which may be useful, particularly to growers with a considerable acreage of small seedling stock or in areas where mechanical cultivation is not feasible because of broadcast-seeded beds, close spacing of trees or growth habit of the conifers.

The 1948 experiments at the Hugo Sauer nursery revealed that first-year white spruce sprayed with mineral spirits May 21 suffered considerable mortality, especially with

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Relative tolerance of species to mineral spirits in nurseries where commonly grown	Species	Apparent safe dosages of mineral spirits (Gallons per acre)	
		Trees under 6 weeks old	Trees older than 6 weeks
I. Tolerant	Norway pine Jack pine Ponderosa pine Austrian pine Mugho pine	40 to 75	75 to 90
II. Moderately tolerant	Balsam fir Douglas fir White pine Scotch pine	35 to 50	50 to 75
III. Sensitive	White spruce Colorado blue spruce Norway spruce Northern white cedar Eastern red cedar	25 to 40	50 to 75
IV. Very sensitive	Tamarack European larch	Not recommended at present. More tests needed.	

Mr. Stoeckeler is forester in charge, northern branch, lake states forest experiment station, Rhinelander, Wis.

# Pennsylvania Nurserymen's Conference

By R. P. Meahl

A report of the first day's sessions at the annual nurserymen's conference sponsored by the department of horticulture, Pennsylvania State College, State College, February 15 to 17, appeared in the *American Nurseryman* for March 15.

## Propagation Methods.

The first speaker for the second day's program was R. P. Meahl, department of horticulture, who talked on "Plant Propagation Problems." Although covering all phases of propagation, Professor Meahl stressed the methods by seeds and cuttings. Most of the plants with which a nurseryman deals have a delay in the germination process, caused by one or more factors. Many of the seeds have a hard seed coat which prevents the entrance of water when they are planted, causing a delay. Common examples of this are the seeds of leguminous plants, such as the honey locust or Kentucky coffee tree. All that is needed to overcome this delay is to break through the hard seed coat without injuring the embryo and the endosperm. Any mechanical means, such as filing or cracking, might be used, but Professor Meahl recommended soaking the seeds in concentrated sulphuric acid. The exact time of soaking will vary with the thickness of the seed coat and the dryness of the seeds. Seeds of honey locust which have been in dry storage for three or four months will probably need from forty-five to sixty minutes of soaking in the acid. It was suggested that a small sample of seeds be treated for varying lengths of time and then planted to determine the best soaking time. If not treated long enough, the seed coat will not be softened, and, if treated too long, the embryo will be injured. After treating, the seeds must be washed thoroughly to remove all trace of the acid.

Some seeds are apparently mature but will not germinate immediately because of certain internal conditions. These are said to require an after-ripening period. It has been found that this period can be shortened by stratification. Under present-day practices, stratification consists of storing the seeds under moist conditions at a low temperature for a period of time, the moist condition usually being provided by mixing the seeds in a peat and sand mixture. The temperature should be kept at about 41

degrees Fahrenheit for most seeds, but if storage facilities are not available, the seeds may be placed outside in sections of the country where winter conditions will provide the necessary low temperature. The time of storage varies with the species of seeds, but in most cases a range of sixty to ninety days will be effective.

A combination of factors causes the delay in germination of some seeds. For example, crataegus, or hawthorn, seeds have a hard seed coat, but also need an afterripening period. Such seeds require treatments for each factor, needing soaking in acid followed by stratification.

Professor Meahl recommended growing semihardwood cuttings for propagating many deciduous shrubs. The cuttings should be taken when the wood is partially hardened but before it becomes extremely firm. Again the exact time will vary with the species, but, for the majority, from the middle of June to the middle of August will be a good time. There are exceptions, and hybrid lilacs, for example, should be taken earlier, by the first part of June. When the cutting is made, as much foliage should be left on as can be kept from wilting, since the more foliage present, the more food will be manufactured for root development. Too much foliage may result in wilting, which will hinder rooting. A happy medium must be sought.

## Fruits for Home Plantings.

"Fruit Varieties for Home Plantings" was the topic of a talk by C. S. Bittner, specialist in pomology extension. Although Professor Bittner did not believe tree fruits should be recommended for most home gardens, he urged the use of dwarf trees whenever the nurserymen had to plant some type of tree fruits. He also suggested the use of small fruits, saying that they should be a part of every homeowner's planting. The field of maintenance in fruit work was suggested as having possibilities for nurserymen, with spraying, fertilizing and pruning as the main parts of such a service.

Professor Bittner listed several varieties of fruits which could be recommended for home plantings. In apples, all on dwarf stock, Transparent and Lodi are good early varieties, with Duchess a little later and Wealthy ripening in late August or early September. Jonathan is

ready a little later. The late or winter varieties suggested were McIntosh, Golden Delicious, Stayman, Winesap and Rome Beauty.

The peach varieties listed in the order of ripening were Early Red Free, Redhaven, Golden Jubilee, Halehaven and Elberta. The plum varieties suggested were Burbank, Lombard and Stanley. The cherry varieties were much the same as commercial varieties: Montmorency for an early sour; Napoleon for a white sweet and Windsor, Bing or Black Tartarian for black sweets.

The first choice in strawberries was Premier, with Catskill second. The black raspberry varieties were Cumberland, Morrison and New Logan, and the red raspberry types listed were Latham, Taylor and Newburgh. The grape varieties were Concord and Fredonia, purple, and Portland and Niagara, white. The currant varieties recommended were Red Lake and Wilder, and gooseberry varieties were Poorman and Chautauqua.

## Photography as a Sales Aid.

In speaking on "Color Photography as an Aid in Nursery Sales," Dr. G. F. Johnson, professor of agricultural extension and specialist in visual education, urged the use of colored slides better to portray plant material in off seasons and to show well planted gardens to induce customers to buy. He stressed the necessity of making sure the camera was held steady during the exposure and also that the subject was in focus to prevent blurring. He advised having the main subject a little off center in the picture, and when features such as hedges, shrubbery borders or driveways are part of the picture, having them extend from left to right, if possible. Sky lines should be varied from the horizontal.

Professor Johnson illustrated his talk with slides of garden and general landscape scenes. He also displayed a small illuminator in which about twenty 2x2-inch slides could be shown at one time. Such an illuminator would be useful to nurserymen in displaying pictures of plant material or garden scenes to clients, he said.

## Control of Nursery Insect Pests.

The next speaker was S. G. Gesell, specialist in entomology extension, whose topic was "Insects Affecting

[Continued on page 76.]

# SAVE-Flower Seeds in Bulk

<b>ACHILLEA</b>		
ageratum yellow, Sweet Yarrow, 1/2 oz.	\$0.55	
filipendula, yellow, 1/2 oz.	.45	
millefolium kelwayi, rose, 1/2 oz.	.35	
<b>ACONITUM</b>		
lycoctonum, cream, Wolfsbane, 1/2 oz.	.35	
<b>AGROSTEMMA</b>		
coronaria, Rose Campion, violet, 1/2 oz.	.30	
coronaria atrosanguinea, deep red, 1/2 oz.	.25	
<b>ALSTROEMERIA</b>		
aurantiaca, 1/2 oz.	.45	
<b>ALYSSUM</b>		
argenteum, Yellow-tuft, 1/2 oz.	.45	
montanum, yellow, 1/2 oz.	.45	
saxatile compactum Gold Dust, 1/2 oz.	.30	
<b>ANCHUSA</b>		
italica (azurea) Dropmore, 1/2 oz.	.25	
italica (azurea) Opal, 1/2 oz.	.30	
<b>ANEMONE</b>		
coronaria Queen, blue, 1/2 oz.	.30	
coronaria Queen, deep scarlet, 1/2 oz.	.35	
<b>ANTHEMIS</b>		
kelwayi, yellow, 1/2 oz.	.25	
tinctoria, Golden Marguerite, 1/2 oz.	.30	
<b>AQUILEGIA</b>		
coerulea, sky-blue, 1/2 oz.	.35	
coerulea White Queen, 1/2 oz.	.45	
camdensis, old rose with yellow, 1/2 oz.	.45	
chrysantha, Golden Columbine, 1/2 oz.	.35	
clenatiflora, 1/2 oz.	.70	
Dobbies' Imp. long-spurred hybrids, mixed, 1/2 oz.	.55	
long-spurred hybrids, Blue Shades, Copper Queen, Orange and Scarlet, Pink Shades, Rose Shades, White or Yellow Shades, each 1/2 oz.	.55	
long-spurred hybrids, mixed, 1/2 oz.	.45	
longissima, pale yellow, 1/2 oz.	1.75	
Mrs. Scott Elliott's long-spurred hybrids, mixed, 1/2 oz.	.55	
<b>ARABIS (Albida)</b>		
alpina, lg. fl., white, 1/2 oz.	.30	
<b>ARMERIA</b>		
alpina, lg. fl., rose, 1/2 oz.	.50	
formosa, lg. fl., hybrids, 1/2 oz.	.50	
<b>ASCLEPIAS</b>		
tuberosa, 1/2 oz.	.55	
<b>AUBRIETA</b>		
Giant hybrids, mixed, 1/2 oz.	.35	
<b>BAPTISIA</b>		
australis, 1/2 oz.	.45	
<b>BELLIS</b>		
perennis, dble., Longfellow or Snowball, 1/2 oz.	.35	
perennis Monstrosa, dble. crimson, rose, white or mixed, 1/2 oz.	.45	
perennis Monstrosa tuberosa, Etna, red, 1/2 oz.	.40	
<b>BOCCONIA</b>		
cordata japonica, 1/2 oz.	.30	
<b>BOLTONIA</b>		
latiaguama, violet-blue, 1/2 oz.	.35	
<b>CALLIHOE</b>		
involucrata, reddish-purple, 1/2 oz.	.45	
<b>CAMPANULA</b>		
barbata, blue, 1/2 oz.	.30	
carpatia blue or white, each 1/2 oz.	.30	
medium calycanthema, Cup and Saucer; dark blue, lilac, rose or white, each 1/2 oz.	.30	
medium, double, mixed, 1/2 oz.	.25	
medium, single, dark blue, lilac, rose-pink, white, or mixed, each 1/2 oz.	.25	
persicifolia, single, white, 1/2 oz.	.40	
rotundifolia, 1/2 oz.	.45	
<b>CANDYTUFT</b>		
gibraltaria, lilac, 1/2 oz.	.30	
<b>CARNATION</b>		
Chabaud's Imp. cardinal-red (Sparkler), crimson (Nero), deep rose, flesh-pink, salmon-rose (Legion of Honor), white (Jeanne D'Or), yellow (Marie Chabaud) or violet, each 1/2 oz.	.45	
Chabaud's Imp., mixed, 1/2 oz.	.40	
Enfant de Nice, pale pink, red, rose, salmon, scarlet, striped or white, each 1/2 oz.	.90	
Enfant de Nice, mixed, 1/2 oz.	.55	
Grenadin Black King, Cardinal-red, Golden Sun, Rose Queen, Snow White, Triumph Pink, or White Gold, each 1/2 oz.	.45	
Grenadin, mixed, 1/2 oz.	.45	
Grenadin, mixed, 1/2 oz.	.45	
Marguerite, Gt. Malmesbury strain, mixed, 1/2 oz.	.45	
<b>CENTAUREA</b>		
candissima, 1/2 oz.	.40	
gymnocarpa, rose, Dusty Miller, 1/2 oz.	.35	
<b>CERASTIUM</b>		
biebersteinii, white, 1/2 oz.	.30	
<b>CHEIRANTHUS</b>		
allioni, Siberian Wallflower, orange, 1/2 oz.	.25	
<b>CHELONE</b>		
barbata hybrid, mixed, 1/2 oz.	.25	

## CHRYSANTHEMUM

indicum, sgle., early, mixed, 1/2 oz.	\$0.65
leucanthemum, Alaska or Conqueror, each 1/2 oz.	.30
leucanthemum Giant, double white, 1/2 oz.	.40

## COREOPSIS

lanceolata Mayfield Giants, 1/2 oz.	.30
lanceolata Sunburst, dble. golden, 1/2 oz.	.35

## DELPHINIUM

Belladonna, light blue, 1/2 oz.	.45
Belladonna Clivedon Beauty, 1/2 oz.	.60
Belladonna, light blue, improved, 1/2 oz.	.65
Bellamosum, dark blue, 1/2 oz.	.45
Blackmore & Langdon hybrids, mixed, 1/2 oz.	.55

chinensis, dl., Butterfly Blue, 1/2 oz.	.30
chinensis, dwarf, white, 1/2 oz.	.30
chinensis, tall, dark blue, 1/2 oz.	.30
chinensis, tall, Cambridge Blue, 1/2 oz.	.45
chinensis, tall, white, 1/2 oz.	.30
formosum, deep blue, 1/2 oz.	.45
Gold Medal hybrids, 1/2 oz.	.45
Iceberg, pure white, 1/2 oz.	.45
nudicaule, scarlet, 1/2 oz.	.90
Pacific Giant hybrids, mixed, 1/2 oz.	1.00
Wrexham (Hollyhock fl.), mixed, 1/2 oz.	.80

## DIANTHUS

allwoodi alpinus, 1/2 oz.	.45
barbatus—see Sweet William	
chinensis, double, mixed, 1/2 oz.	.30
chinensis, single, mixed, 1/2 oz.	.30
deltoides, crimson, 1/2 oz.	.65
deltoides, rose, Maiden Pink, 1/2 oz.	.55
deltoides erecta, red, 1/2 oz.	.45
deltoides splendens, red, 1/2 oz.	.65
heddewigi, dble., mixed, 1/2 oz.	.30
heddewigi, single, mixed, 1/2 oz.	.25
plumarius, single, mixed, 1/2 oz.	.25
plumarius semperflorens, double, mixed, 1/2 oz.	.45
plumarius semperflorens, single, mixed, 1/2 oz.	.30

## DICENTRA

eximia, 1/2 oz.	.45
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## ECHINOPS

ritro, violet, 1/2 oz.	.25
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sphaerocephalus, 1/2 oz.	.40
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## EREMURUS

bungei perfectus, 1/2 oz.	.75
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robustus, 1/2 oz.	.65
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yellow-orange, bronze hybrids, 1/2 oz.	.75
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## GALLIARDIA

lg. fl. Darzier, 1/2 oz.	.35
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lg. fl. Gobl, 1/2 oz.	.40
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lg. fl. Portola hybrids, 1/2 oz.	.35
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lg. fl. mixed, 1/2 oz.	.30
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picta lorenziana, double, mixed, 1/2 oz.	.30
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## GENTIANA

acaulis, dk. blue, 1/2 oz.	.45
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lutea, yellow, 1/2 oz.	.50
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## GERANIUM

Lady Stratheden, 1/2 oz.	.50
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Mrs. Bradshaw, 1/2 oz.	.45
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## GYPSOPHILA

oldhamiana, 1/2 oz.	.45
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paniculata, double, white, 1/2 oz.	.60
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paniculata, single, white, 1/2 oz.	.25
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repens, dwarf, white, 1/2 oz.	.40
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## HELLEBORUS

foetidus, 1/2 oz.	.30
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niagara Christmas Rose, 1/2 oz.	.35
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## HESPERIS

matronalis, purple, 1/2 oz.	.30
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matronalis, white, 1/2 oz.	.25
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## HEUCHERA

sanguinea, hybrids, mixed, 1/2 oz.	1.90
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## HIBISCUS

at. fl. mixed, 1/2 oz.	.30
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## HOLLYHOCK

Chater's double, black, Cornman-pink, lilac, maroon, Newport Pink, red, rose, salmon-rose, scarlet, white or mixed, each 1/2 oz.	.45
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## IRIS

germanica, 1/2 oz.	.30
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kaempferi, 1/2 oz.	.55
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## LIATRIS

pyncostachya, purple, rubbed seeds, 1/2 oz.	.40
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scariosa, blue, rubbed seeds, 1/2 oz.	.35
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spicata, blue, rubbed seeds, 1/2 oz.	.45
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## LINARIA

dalmatica, yellow, 1/2 oz.	.40
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## LINUM

flavum, Golden Flax, 1/2 oz.	.55
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perenne, blue, 1/2 oz.	.25
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perenne, white, 1/2 oz.	.30
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## LUPINUS

polyphyllus atrovioacea, rose, salmon, sunshin, white, yellow or mixed, each 1/2 oz.	.35
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polyphyllus, blue, 1/2 oz.	.30
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polyphyllus, Russell's hybrid, 1/2 oz.	.40
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## LYCHNIS

arkwrightii, scarlet, 1/2 oz.	.45
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haageana hybrids, 1/2 oz.	.55
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viscaria splendens, rose, 1/2 oz.	.30
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## LYTHRUM

salicaria, purple, 1/2 oz.	\$0.55
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## MATRICARIA

capensis, dble., white, Feverfew, 1/2 oz.	.35
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eximia, dble., dl., Golden Ball, Lemon Ball or Snowball, each 1/2 oz.	.40
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## MECONOPSIS

baileii, sky-blue, 1/2 oz.	.75
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## MIMULUS

moschatus, 1/2 oz.	.55
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tigrinus, yellow-spotted, 1/2 oz.	.35
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## MONARDA

fistulosa, 1/2 oz.	.55
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menthaefolia, 1/2 oz.	.55
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## MYOSOTIS

alpestris, blue, 1/2 oz.	.40
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alpestris Blue Ball, 1/2 oz.	.55
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alpestris, indigo-blue (Royal Blue), 1/2 oz.	.45
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alpestris Messidor, blue, late fl., 1/2 oz.	.45
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alpestris, rose, 1/2 oz.	.40
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alpestris, dwarf, indigo-blue, 1/2 oz.	.60
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alpestris robusta, blue, 1/2 oz.	.60
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alpestris Victoria, dl., blue, 1/2 oz.	.55
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## NEPETA

missini, violet, 1/2 oz.	.35
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## PANSY—see also VIOLA

Swiss Giants: Alpenglöck, Berna, Coronation Gold, Flame, Jungfrau, Lake of Thun, Luna, Pure Yellow, Rhinegold, Silverbird, or Wine-red, each 1/2 oz.	1.10
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Swiss Giants, mixed, 1/2 oz.	.90
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Trimardeau, mixed, 1/2 oz.	.55
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## PENSTEMON

glaber roseus, rose, 1/2 oz.	.75
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## POLEMONIUM

nudicaule, blue, 1/2 oz.	.75
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## POPPY

nudicaule, Gartford Gts., mixed, 1/2 oz.	.35
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nudicaule, Sanford's hybrids, mixed, 1/2 oz.	.40
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nudicaule, The Emperor, orange, 1/2 oz.	.40
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nudicaule, Unwin's Giant Coonara, 1/2 oz.	.40
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nudicaule, single, white, 1/2 oz.	.35
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nudicaule, single, mixed, 1/2 oz.	.30
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## POTENTILLA

warrensis, yellow, 1/2 oz.	.75
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## PRIMULA

polyantha, red or yellow, 1/2 oz.	.45
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veris, 1/2 oz.	.45
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## PYRETHRUM

roseum, double, mixed, 1/2 oz.	.45
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roseum, single, atrosanguineum, pink or rose, each 1/2 oz.	.35
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roseum, single, Robinson's hybrids, 1/2 oz.	.35
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roseum, single, mixed, 1/2 oz.	.30
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## RANUNCULUS

asiaticus superbissima, mixed, 1/2 oz.	.35
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## SALVIA

pratensis, 1/2 oz.	.45
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## SCABIOSA

caucasica, House hybrids, 1/2 oz.	.55
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caucasica, lilac, 1/2 oz.	.45
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caucasica perfecta, lg. fringed-lilac, 1/2 oz.	.45
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caucasica, white, 1/2 oz.	.55
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caucasica, mixed, 1/2 oz.	.45
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columbaria, pink, 1/2 oz.	.40
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## SIDALCEA

hybrids, mixed, 1/2 oz.	.50
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Rose Queen, 1/2 oz.	.55
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## STATICE

dumosa, 1/2 oz.	.40
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latifolia, dl. lavender, 1/2 oz.	.35
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## SWEET WILLIAM

double, mixed, 1/2 oz.	.30
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single, Auricola-eyed, Coppery-red, Dunnet, Newport Pink or Sutton's Fairy, each 1/2 oz.	.30
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# Plant Notes Here and There

By C. W. Wood

To the great loss of American horticulture, especially that of the warmer sections, Texas plants still remain unknown for the most part. Most of them seem unknown even to Texas nurserymen and gardeners. I was reminded of this fact recently while looking over some old notebooks in which several Texas plants were mentioned as being under trial, including *Cienfugosia sulphurea*.

The experienced gardener always receives a member of the malva family with high hope, knowing from former contacts with the plants that it has a good chance, according to the law of averages, of being a worthwhile plant. I have no doubt that the Texas malvaceae would run true to form. That opinion is based on a few tried here in northern Michigan which were hardy enough to stand the winters of this region, especially if placed in a protected frame or pit.

The little shrub, *Cienfugosia sulphurea*, found along the Gulf coast, should be in southern gardens. It is an intermittent bloomer throughout the summer (perhaps constant under ideal growing conditions), producing yellowish mallows, up to two inches across, on slender, short stems. From my observations, it appears to be able to survive under the most adverse growing conditions, in all sections where it can stand the winters. Some testing would be necessary to find out how much cold it could stand. Certainly, this part of Michigan is much too far north for it, and I should not expect it to be hardy north of St. Louis, Mo.

The southwest also holds several hibiscus species which seem never to be found far away from home. And the same could be said of *sphaeralcea*, a large genus of mallows largely confined to the warmer parts of America. One in particular, *S. angustifolia*, I remember with pleasure. It grew about a foot tall, with a foil of long, narrow leaves for the white to pink mallows, produced throughout the summer.

## A Good Rabbit Brush.

While going over the notes to which I have already referred, I found some devoted to an especially good rabbit brush, *Chrysothamnus pulchellus*, a lovely composite which I once had and lost, perhaps because of the extreme cold of the winters in northern Michigan. The different species cover a wide range in the west and southwest and are mostly

hardy as far as I know. No doubt the present plant would be hardy even this far from the equator if material from the northern part of its range could be had.

This southwestern representative is a shrubby plant, about two feet high as it grew here, with pale yellow tassels in late summer and early autumn. It grew well in full sun and light soil and made an attractive picture in its late season, being far more subdued than many composites of its season. Easily grown from fall-sown seeds and no doubt from cuttings of new growths in spring, *C. pulchellus* is a composite which deserves the attention of gardeners.

## Hardy Cyclamens.

A Connecticut reader of this column asks if the hardy cyclamens hold much promise for a neighborhood nurseryman with a clientele of advanced, ardent gardeners. I think it is safe to give an affirmative answer, for I know of no group of hardy bulbous or tuberous plants which holds more promise. It is true, of

course, that not one gardener in a hundred has ever seen hardy cyclamens, but many have read about them and are longing for a chance to have them in their own gardens.

The situation presents a paradox. We have, on the one hand, lovely plants of easy culture, some of which have been in cultivation since the dawn of garden history; on the other hand, we find stock quite nonexistent in this country. Why, you may ask, do these conditions prevail? It can probably be explained as follows: We were just reaching the point in our horticultural evolution where we were beginning to think about plants a little out of the ordinary when the plant quarantine went into effect. It was then too late, of course, to obtain foundation stock, and inertia has since seen to it that we have made

## Immediate Bargains in Fine

**TAXUS** Twice transplanted in field. Bushy.

	Per 100	Per 1000
Upright,		
8 to 12 ins.	\$45.00	\$400.00
12 to 15 ins.	50.00	450.00

Spreading,  
8 to 12 ins. 45.00 400.00

Hicks', 9 to 12 ins. 45.00 400.00

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Canadian Hemlock  
American Arborvitae  
Balsam Fir

	Per 100	Per 1000
2 to 4 ins., sdgls.	\$0.80	\$ 5.00
3 to 6 ins., sdgls.	1.50	10.00
6 to 9 ins., sdgls.	2.50	15.00
9 to 12 ins.	6.00	40.00
12 to 18 ins.	8.00	65.00

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## QUALITY LINERS

Canadian Hemlock	Per 100
6 to 12 ins., transplants (4-yr.)	\$15.00
White Pine	
6 to 12 ins., transplants (4-yr.)	12.50
Hicks' Upright Yew	
9 to 12 ins., heavy	35.00

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## QUALITY LINING-OUT STOCK FOR IMMEDIATE DELIVERY

	Per 100
300 Acer Palmatum Atropurpureum	
Novum, grafts, 12 to 16 ins. \$125.00	
<b>AZALEAS.</b> All Azaleas grown in DDT-treated soil.	
600 Mollis, 2-yr., 4 to 6 ins.	25.00
1400 6 to 8 ins.	30.00
800 8 to 10 ins.	35.00
200 10 to 12 ins.	45.00
200 12 to 15 ins.	60.00
3000 Pontica, 2-yr., 3 to 6 ins.	6.00
4000 Vaseyi, 2-yr., 3 to 6 ins.	6.00
<b>AZALEAS.</b> Lining-out stock. As illustrated. Grown in a cool house through the winter. Available May 1.	
2900 KAEMPFERI—Atlanta	20.00
2850 Carmen	20.00
2850 Fedora	20.00
2650 Ledifolia Alba	20.00
5000 Mixed	20.00
All the above at \$175.00 per 1000.	
9000 KURUME—Hinodegiri	17.50
1000 Pink Pearl	17.50
750 Snow	17.50
All the above at \$150.00 per 1000.	
8250 Buxus Suffruticosa, 2-yr., 6 to 8 ins.	20.00
2000 Chamaecyparis Plumosa Aurea, 2-yr., 8 to 10 ins.	25.00
1000 2-yr., 10 to 15 ins.	30.00
350 Cornus Florida Fl.-Fl., grafts, 2-yr., 18 to 24 ins.	150.00
Cornus Florida Rubra,	
125 15 to 18 ins.	125.00
242 18 to 21 ins.	150.00
110 21 to 24 ins.	175.00
8300 Ilex Bullata, 4 to 6 ins.	15.00
3450 6 to 8 ins.	20.00
3900 8 to 10 ins.	25.00
1000 8 to 10 ins., 2-yr.	30.00
200 Ilex Crenata, 4 to 6 ins.	15.00
4000 6 to 8 ins.	20.00
1900 8 to 10 ins.	25.00
1000 Ilex Microphylla, 4 to 6 ins.	20.00
Ilex Opaca, 1-yr. seedlings,	
9000 3 to 6 ins.	6.50
Ilex Verticillata, 2-yr.,	
1000 8 to 12 ins.	15.00
Juniperus Plumosa Depressa (Andorra), 6 to 8 ins.	18.00
500 Juniperus Meyerl, 4 to 6 ins.	25.00
Juniperus Pfitzeriana,	
9700 4 to 6 ins.	20.00
2430 6 to 8 ins.	25.00
750 6 to 9 ins., 2-yr.	30.00
2000 Juniperus Sabina, 6 to 8 ins.	20.00
895 Juniperus Stricta, 4 to 6 ins.	18.00
3570 6 to 8 ins.	22.50
100 6 to 9 ins., 2-yr.	25.00
1300 8 to 10 ins., 2-yr.	30.00
1500 10 to 12 ins., 2-yr.	40.00
Magnolia Soulangeana,	
420 10 to 12 ins.	125.00
330 12 to 15 ins.	150.00
Magnolia Soulangeana Nigra,	
500 10 to 12 ins.	125.00
Pachysandra Terminalis,	
4000 Rooted cuttings	8.00
Picea Pungens Glauca, 2-yr.,	
200 6 to 8 ins.	30.00
Pieris Japonica, 2-yr.,	
4000 4 to 6 ins.	32.50
2500 6 to 8 ins., 2-yr.	35.00
Pinus Mugo Mughus, 2-yr.,	
1000 4 to 6 ins.	11.00



**AZALEA HINODEGIRI**  
A Fair Sample of our Spring Liners.

### RHODODENDRON HYBRIDS. GRAFTS.

	Each
Roseum Grandiflorum. (English Roseum),	
130 10 to 12 ins.	\$2.25
50 12 to 15 ins.	2.75
50 15 to 18 ins.	3.50
President Lincoln,	
70 12 to 15 ins.	2.75
250 15 to 18 ins.	3.50
100 18 to 21 ins.	4.25
100 21 to 24 ins.	5.00
Roseum Elegans,	
400 10 to 12 ins.	2.25
330 12 to 15 ins.	2.75
730 15 to 18 ins.	3.50
225 18 to 21 ins.	4.25
Catawbiense Grandiflorum,	
70 10 to 12 ins.	2.75
100 12 to 15 ins.	3.50
100 15 to 18 ins.	4.25
Everestianum,	
50 10 to 12 ins.	2.75
50 12 to 15 ins.	3.50
Roseum Elegans, Own roots,	
300 10 to 12 ins.	1.50

### SYRINGA.

	Per 100
Hybrid French Lilacs, 1-yr. liners. All grafted on California Privet.	
Charles X, single, lilac,	
900 8 to 10 ins.	\$25.00
990 10 to 12 ins.	30.00
1590 12 ins. and up.	32.50
Capitaine Baltet, single, purple,	
400 8 to 10 ins.	25.00
190 10 to 12 ins.	30.00
Edith Cavell, double, white,	
100 8 to 10 ins.	25.00
150 10 to 12 ins.	30.00
Miss Ellen Willmott, double, white,	
850 8 to 10 ins.	25.00
245 12 ins. and up.	32.50
Leon Gambetta, double, pink,	
200 8 to 10 ins.	25.00
Maurice Barres, single, blue,	
550 8 to 10 ins.	25.00
240 10 to 12 ins.	30.00
250 12 ins. and up.	32.50
Marchal Lannes, double, purple,	
100 10 to 12 ins.	25.00
President Grevy, double, blue,	
110 12 ins. and up.	32.50
Ruhm von Horstenstein, single, red,	
1450 8 to 10 ins.	25.00
1100 10 to 12 ins.	30.00
1925 12 ins. and up.	32.50
Taxus Cuspidata Nana Brevifolia,	
8200 4 to 6 ins.	20.00
5000 6 to 8 ins.	25.00
1300 6 to 9 ins., 2-yr.	30.00
Taxus Cuspidata Spreading,	
8900 6 to 8 ins.	18.00
5000 8 to 10 ins.	22.00
2000 8 to 10 ins., 2-yr.	25.00
1000 10 to 12 ins., 2-yr.	30.00
Taxus Media Hatfieldi,	
7000 4 to 6 ins.	16.00
6500 6 to 8 ins.	20.00
5800 2-yr., 8 to 10 ins.	25.00
4000 2-yr., 10 to 12 ins.	30.00
1000 2-yr., 12 to 15 ins.	35.00
7400 Taxus Hicksi, 4 to 6 ins.	16.00
9000 6 to 8 ins.	20.00
7800 8 to 10 ins., 2-yr.	25.00
1000 10 to 12 ins., 2-yr.	30.00
2900 12 to 15 ins., 2-yr.	35.00
950 15 to 18 ins., 2-yr.	40.00
Taxus Hunnewelliana,	
5000 6 to 8 ins.	20.00
Thuja Occidentalis Globosa,	
500 6 to 8 ins.	25.00
300 Thuja Pyramidalis, 8 to 10 ins.	25.00
Thuja Occidentalis, seedlings, grafting size, 10 to 12 ins.	20.00
1000 Thuja Woodwardi, 4 to 6 ins.	22.00
1000 6 to 8 ins.	25.00
Thuja Orientalis Aurea Nana, grafts, 6 to 8 ins.	45.00
8300 grafts, 8 to 10 ins.	50.00
8800 Selected yellow seedlings, 6 to 8 ins.	25.00
1000 Selected yellow seedlings, 8 to 10 ins.	30.00
900 Thuja Orientalis (Green Blot), lining-out size	4.00
15,000 Thuja Orientalis Elegantissima, grafts, 6 to 8 ins.	45.00
1450 grafts, 8 to 10 ins.	50.00
150	

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240 Hopa Crab, 2 to 3 ft.....	\$4.00	\$35.00
250 Prunus Triloba, 18 to 24 ins.....	5.00	45.00
200 Prunus Triloba, 2 to 3 ft.....	6.50	60.00
1500 Niobe Weeping Willow, 5 to 6 ft.....	6.00	50.00
900 Niobe Weeping Willow, 6 to 8 ft.....	9.00	80.00
1200 Wisconsin Weeping Willow, 5 to 6 ft.....	6.00	50.00
900 Wisconsin Weeping Willow, 6 to 8 ft.....	9.00	80.00

### ORNAMENTAL SHRUBS

700 Persian Lilac, 12 to 18 ins.....	2.00	18.00
400 Persian Lilac, 18 to 24 ins.....	3.00	25.00
600 Common Purple Lilac, 12 to 18 ins.....	2.20	18.00
600 Philadelphus Coronarius, 18 to 24 ins.....	2.50	22.00
200 Philadelphus Coronarius, 2 to 3 ft.....	3.50	30.00
500 Philadelphus LeMoine, 2 to 3 ft.....	3.20	28.00
200 Philadelphus LeMoine, 3 to 4 ft.....	4.00	35.00
170 Philadelphus Lewisii, 2 to 3 ft.....	4.00	35.00
900 Philadelphus Bouquet Blanc, 2 to 3 ft.....	4.00	35.00

900 Philadelphus Minnesota Snowflake, 18 to 24 ins.....	5.00	45.00
3700 Philadelphus Minnesota Snowflake, 2 to 3 ft.....	6.00	55.00
500 Philadelphus Minnesota Snowflake, 3 to 4 ft.....	7.50	70.00

This is the new, superior Philadelphus (Plant Pat. No. 538). Bears profusely double, pure white flowers and is a much more rugged and better furnished plant than Philadelphus Virginialis. This variety is proving very popular and has established a place for itself in the trade in the past three years.

300 Spiraea Arguta, 18 to 24 ins.....	2.50	22.00
700 Spiraea Billiardi, 18 to 24 ins.....	2.20	18.00
900 Spiraea Billiardi, 2 to 3 ft.....	3.00	25.00
400 Spiraea Vanhouttei, 2 to 3 ft.....	2.80	25.00
1500 Tamarix Africana, 2 to 3 ft.....	3.20	28.00
850 Tamarix Africana, 3 to 4 ft.....	4.00	35.00

### VINES

2000 Honeysuckle, Magnifica, 2-yr., No. 1.....	3.50	30.00
1000 Honeysuckle, Tellmanniana, 2-yr., No. 1.....	4.00	35.00

### PERENNIALS

3700 Caryopteris Blue Spires, 12 to 18 ins.....	2.20	18.00
4500 Morden Pink Lythrum, No. 1.....	1.80	15.00
2400 Dropmore Purple Lythrum, No. 1.....	1.80	15.00

### EVERGREEN LINERS

	Per 100	Per 1000
5000 Jewell Globe Arborvitae, 2 1/4-in. pot plants.....	\$20.00	\$180.00
7000 Jewell Pyramidal Arborvitae, 2 1/4-in. pot plants.....	20.00	180.00
12,000 Juniper, Andorra, 2 1/4-in. pot plants.....	20.00	180.00

All stock available for immediate delivery from storage.

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## JEWELL NURSERIES, Inc.

Box 457

Lake City, Minn.

## AMERICAN NURSERYMAN

little effort to correct the error. It is granted that the process of working up a stock is a slow, tedious one, but it is not impossible.

First of all, cyclamen seeds should be planted as soon as ripe, and that is not always easy to do, especially when we have to depend upon European sources for our supply. If seeds can be obtained while fresh, one should plant them then; if not, he should plant them in autumn in an outdoor frame or, better yet, in pans placed in an outdoor frame. Peat or sifted leaf mold and sandy loam, about half and half, will make a good mixture. Seeds should be planted about one-half inch deep and almost an inch apart, for they are to remain in the seedbed until the plants have grown two leaves. When these are grown, the plants are ready to transplant. Two courses, frames or pots, are then open to the grower. Personally, I like frames better than pots, because they require less work, but it must be admitted that pot culture has some advantages, not the least being an answer to the problem of root disturbance after the roots have grown much. In either case, one should watch the drainage and strive to keep the soil sweet. Under good care, some of the plants may bloom the second year, but most will probably not bloom for three years, and some not until the fourth year. It will be seen then that the term "slow, tedious process" was an understatement.

Many kinds of cyclamens are mentioned in foreign catalogs, but it would be merely an aggravation to list them all here. At least two kinds, *C. europaeum* and *C. neapolitanum*, are available in this country. Incidentally, they are about the best for the beginner in cyclamen culture, especially if he lives in the north. That statement is made not because they are the most beautiful of the genus nor the most floriferous, but because they are long-enduring, requiring little more than a well drained, porous soil, well filled with leaf mold and with a little lime thoroughly mixed with the other ingredients. These and some shade seem to be the sum of their needs as they have been grown here.

*C. europaeum* begins to bloom in midsummer, sending up rosy-red flowers with the fragrance of violets. With good luck, the display should last into September. It is never an overpowering show, but there are always enough of the pretty, reflexed flowers to make a pleasing picture.

The second type, *C. neapolitanum*, is the most attractive of the hardy kinds that have been grown here, with beautiful silver-zoned leaves as

# LINKING-OUT STOCK — All Stock Well Grown and Grade A

## ROOT GRAFTS

Immediate Shipment.		Each	Each
		10 to 24	25 to 300
<b>MALUS—Flowering Crab Apple.</b>		\$0.15	\$0.10
eleyi	loensis plena		
floribunda	sargentii		
<b>PRUNUS—Flowering Cherry</b>	scheideckeri	.20	.15
Amanogawa, agie, pink, pyramidal			
Shidare-higan, agie, pink, weeping			
Kwanzan, dbie, pink			
Mount Fuji, dbie, white			
Yoshino, agie, pink			
<b>SYRINGA—French Hybrid Lilac</b>		.20	.15
<b>SINGLE</b>			
Bluish—Ambassadeur, Diplomat, Pres. Lincoln			
Lilac—Hugo Koster			
Reddish-purple—Marchal Foch, Ruhm von Horstenstein			
Pinkish—Lucie Balfet			
Purple—Monge, Ludwig Spaeth, Etna			
White—Jan Van Tel, Mont Blanc			
<b>DOUBLE</b>			
Bluish—Duc de Massa			
Lilac—Victor Lemoine, Henri Martin, Leon Gambetta			
Reddish-purple—Comte de Kerchove, Mrs. Edw. Harding			
Pinkish—Mme. A. Buchner, Katharina Havemeyer			
White—Edith Cavell, Ellen Willmott			

## GRAFTS

On understocks, well established in 2 1/2-in. rose pots. Size indicated is size of scion. About May 1.

		Each	Each
		10 to 24	25 to 300
<b>Acer pal. atropurpureum</b> , 10 to 15 ins.		\$0.85	\$0.75
<b>Biota aurea nana</b> , 8 to 10 ins.		.55	.45
<b>Cornus kousa chinensis</b> , 10 to 15 ins.		.80	.65
<b>Fagus sylvatica</b> , 10 to 15 ins.		.80	.65
heterophylla	purpurea		
fastigiata	purpurea pendula		
pendula	tricolor		
<b>Hamamelis jap. flavo-purpureascens</b> , 10 to 15 ins.		.80	.65
<b>Hamamelis mollis</b> , 10 to 15 ins.		.80	.65
<b>Tsuga canadensis</b> , 8 to 10 ins.		.90	.75

## ROOTED CUTTINGS

Treated with hormones. Excellent roots. Efficiently packed to assure safe arrival. Ready now.

		Each	Each
		25 to 299	300 up
<b>Buxus koreana</b> , 3 to 5 ins., hardy		\$0.07	\$0.06 1/2
<b>Buxus koreana</b> , 6 to 7 ins., hardy		.11	.08
<b>Ilex crenata</b> , 6 to 8 ins.		.08	.07 1/2
<b>Ilex crenata convexa</b> , 6 to 8 ins.		.08	.07 1/2
<b>Ilex crenata grandifolia</b> , large dark leaves, 4 to 6 ins.		.10	.08
<b>Ilex crenata latifolia</b> , 6 to 8 ins.		.08	.07 1/2
<b>Ilex opaca maecula</b> (male, limit 25), 4 to 6 ins.		.12 1/2	.14
<b>Ilex opaca pyramidalis</b> , hardy, berries well, 4 to 6 ins.		.15	.14
<b>Retinospora plumosa</b> , 6 to 8 ins.		.08	.07 1/2
<b>Retinospora plumosa aurea</b> , 6 to 8 ins.		.08	.07 1/2
<b>Taxus cuspidata</b> , spr., 6 to 8 ins.		.08 1/2	.08
<b>Taxus cuspidata</b> , spr., 8 to 10 ins.		.10	.09
<b>Taxus cusp. brevifolia</b> , 4 to 6 ins.		.08	.07 1/2
6 to 8 ins.		.09	.08 1/2
8 to 10 ins.		.11	.10
<b>Taxus cusp. capitata</b> , 4 to 6 ins.		.08	.07 1/2
<b>Taxus cusp. intermedia</b> , 4 to 6 ins.		.08	.07 1/2
6 to 8 ins.		.09	.08 1/2
8 to 10 ins.		.11	.10
<b>Taxus cusp. Vermeulen</b> , upr. brevifolia		.08	.07 1/2
4 to 6 ins.		.08	.07 1/2
6 to 8 ins.		.09	.08 1/2
8 to 10 ins.		.11	.10
<b>Taxus media hatfieldi</b> , upr., 4 to 6 ins.		.08	.07 1/2
6 to 8 ins.		.09	.08 1/2
8 to 10 ins.		.11	.10
<b>Taxus media hicksi</b> , 4 to 6 ins.		.08	.07 1/2
6 to 8 ins.		.09	.08 1/2
8 to 10 ins.		.11	.10
<b>Taxus media kelseyi</b> (Berrybush), 4 to 6 ins.		.08	.07 1/2
6 to 8 ins.		.09	.08 1/2
8 to 10 ins.		.11	.10

## TRANSPLANTS, Etc.

		Each	Each
		10 to 24	25 to 300
<b>Abelia grandiflora</b> , 2 1/2-in. pot, strong		\$0.20	\$0.13
<b>Acer pal. atropurpureum</b> , pick up only		2.00	1.75
12 to 15 ins., B&B		2.25	2.00
<b>Acer pal. oshii-beni</b> , 1-yr. gr., 3-in. pot		1.00	...
<b>Acer pal. purpureum</b> , selected red sdigs.,		...	...
2-yr. X, 4 to 6 ins.		.20	.15
2 1/2-in. pot, 6 to 8 ins.		.30	.25
2 1/2-in. pot, 9 to 12 ins.		.35	.30
<b>Azalea Gable hybrid Mildred Mae</b> , 2 1/2-in. pot		.25	.25
<b>Azalea Avalanche</b> , 2 1/2-in. pot		.20	.15
<b>Azalea Bridesmaid</b> , 2 1/2-in. pot		.20	.15
<b>Azalea Daybreak</b> , 2 1/2-in. pot		.20	.15
<b>Azalea Hino-crimson</b> , clear, crimson-red, dark green foliage, harder than Hino-degiri, does not fade. Good forcer. May be picked up at Neshanic Sta., N. J., farm if desired.		...	...
4 to 6 ins., liners, hvy.		.45	.35
6 to 8 ins., liners, hvy.		.55	.45
6 to 8 ins., spread, hvy.		1.00	.85
<b>Azalea Hino-degiri</b> , 2 1/2-in. pot, well branched, 300 up		.18	.13
<b>Azalea kaempferi</b> , 2-yr. X, sdig., 6 to 8 ins.		.18	.13
<b>Azalea kaempferi</b> , 2 1/2-in. pot		.18	.13
<b>Azalea kaempferi</b> , hybrid, 2 1/2-in. pot		.20	.15
<b>Azalea kaempferi</b> Carmen, 2 1/2-in. pot		.20	.15
<b>Azalea kaempferi</b> Firefly, 2 1/2-in. pot		.20	.15

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TERMS: Cash with order, no packing charge; otherwise 50 per cent with order, balance plus packing C.O.D. Add \$1.00 to each order under \$10.00 to cover handling.

## TRANSPLANTS, Etc.—Cont.

		Each	Each
		10 to 24	25 to 300
<b>Azalea kaempferi</b> Louise, 2 1/2-in. pot		\$0.20	\$0.15
<b>Azalea ledifolia alba</b> , 2 1/2-in. pot		.18	.13
<b>Azalea ledifolia magnifica</b> , 2 1/2-in. pot		.18	.13
<b>Azalea Pink Pearl</b> , 2 1/2-in. pot		.18	.13
<b>Azalea poukhanensis</b> , 2-yr. X, sdig.		.20	.15
<b>Azalea poukhanensis</b> , 2 1/2-in. pot, 1-yr.		.20	.15
<b>Berberis chenaultii</b> , 2 1/2-in. pot		.20	.15
<b>Hamamelis jap. zuecariniana</b> , lemon-yellow,		...	...
1-yr. gr., 3-in. pot		1.00	.85
<b>Hamamelis jap. flavo-purpureascens</b> , lemon-yellow		...	...
tinged with red, 1-yr. gr., 3-in. pot		1.00	.85
<b>Hamamelis mollis</b> , golden-yellow, 1-yr. gr., 3-in. pot		1.00	.85
<b>Ilex crenata</b> , 1-yr., 2 1/2-in. pot, 6 to 8 ins.		.25	.20
<b>Ilex crenata</b> , 3-in. pot, 8 to 10 ins.		.35	.30
<b>Ilex crenata convexa</b> , 1-yr., 2 1/2-in. pot, 4 to 6 ins.		.25	.20
<b>Ilex crenata convexa</b> , 2-yr., 2 1/2-in. pot, 6 to 8 ins.		.30	.25
<b>Ilex crenata latifolia</b> , 1-yr. X, 2 1/2-in. pot, 6 to 8 ins.		.35	.30
<b>Ilex crenata latifolia</b> , 3-in. pot, 8 to 10 ins.		.35	.30
<b>Ilex opaca pyramidalis</b> , hardy, berries well, for late shipment, 2 1/2-in. pot		.35	.30
<b>Magnolia soulangeana</b> , 2 1/2-in. pot, own-root		.60	.50
<b>Magnolia soul.</b> leonard, sdig., 12 to 15 ins.		.60	.50
<b>Magnolia stellata</b> Waterlily, 2 1/2-in. pot, own-root		.65	.55

		Each	Each
		10 to 24	25 to 300
<b>Malus—Flowering Crab Apple,</b>		\$0.35	\$0.25
1-yr. X, 1 to 2 ft.		24	299 up
<b>atrosanguinea</b>	floribunda		
eleyi	scheideckeri		

<b>Malus sargentii</b> , 2-yr. X, 1 to 2 ft.		.50	.40
<b>Malus spectabilis</b> , 2-yr. X, 3 to 4 ft.		.70	.55
<b>Retinospora plumosa</b> , 3-yr. XX, 10 to 12 ins.		.30	.25
<b>Retinospora plumosa</b> , 3-yr. XX, 12 to 15 ins.		.35	.30
<b>Retinospora plumosa aurea</b> , 3-yr. XX,		...	...
8 to 10 ins.		.30	.25
<b>Retinospora plumosa aurea</b> , 3-yr. XX,		...	...
10 to 12 ins.		.35	.30
<b>Sarcococca hookeriana humilis</b> , 2 1/2-in. pot		.25	.20
1-yr., 2 1/2-in. pot		.30	.25
3-in. pot		.35	.30
<b>Taxus baccata repandens</b> , 1-yr. X, 6 to 8 ins.		.18	.16
<b>Taxus baccata repandens</b> , 1-yr., 2 1/2-in. pot		.25	.20
<b>Taxus baccata Washington</b> , 1-yr., 2 1/2-in. pot		.25	.20
<b>Taxus cuspidata</b> , spr., 6 to 8 ins.		.25	.20
<b>Taxus cuspidata</b> , spr., 2-yr. XX, 8 to 10 ins.		.28	.23
<b>Taxus cusp. brevifolia</b> , 1-yr. X, 6 to 8 ins.		.17	.15
<b>Taxus cusp. brevifolia</b> , 1-yr. X, 8 to 10 ins.		.19	.17
<b>Taxus cusp. capitata</b> , 1-yr. X, 6 to 8 ins.		.18	.16
1-yr. X, 8 to 10 ins.		.20	.18
1-yr. X, 10 to 12 ins.		.22	.20
2 1/2-in. pot, 8 ins.		.22	.19
2 1/2-in. pot, 10 ins.		.25	.22
<b>Taxus cusp. intermedia</b> , 1-yr. X, 8 to 10 ins.		.19	.17
<b>Taxus cusp. thayerae</b> , 1-yr., 2 1/2-in. pot		...	...
6 to 8 ins.		.20	.18
<b>Taxus cusp. Vermeulen</b> , 1-yr. X, 6 to 8 ins.		.17	.15
1-yr. X, 8 to 10 ins.		.19	.17
2-yr. XX, 6 to 8 ins.		.30	.25
2-yr. XX, 8 to 10 ins.		.35	.28
2-yr. XX, 10 to 12 ins.		.38	.32
3-yr. XX, 8 to 10 ins.		.40	.35
3-yr. XX, 10 to 12 ins.		.45	.35
<b>Taxus media</b> , good grower and hardy,		...	...
2-yr. X, 6 to 8 ins.		.20	.15
2-yr. X, 8 to 10 ins.		.22	.17
<b>Taxus media hatfieldi</b> , upr., 1-yr. X,		...	...
8 to 10 ins.		.25	.18
2-yr. X, 4 to 6 ins.		.20	.16
2-yr. X, 6 to 8 ins.		.25	.18
<b>Taxus media hicksi</b> , 1-yr. X, 6 to 8 ins.		.17	.15
<b>Taxus media hicksi</b> , 2-yr. XX, 8 to 10 ins.		.35	.28
<b>Taxus media kelseyi</b> (Berrybush), 1-yr. X,		...	...
6 to 8 ins.		.17	.15
8 to 10 ins.		.19	.17
<b>Tsuga canadensis</b> , 4 to 6 ins., X		.12 1/2	.10
<b>Tsuga canadensis</b> , 6 to 8 ins., X		.15	.12 1/2
<b>Viburnum burkwoodii</b> , 2 1/2-in. pot		.25	.20
1-yr. pot		.30	.25
3-in. pot		.35	.30
<b>Viburnum carlesii</b> , 2 1/2-in. pot		.35	.30
<b>Wistaria macrobotrys multijuga</b> ,		...	...
graft, 2 1/2-in. pot		.30	.25
1-yr. gr., 3-in. pot		.40	.35
2-yr. gr., 4-in. pot		.55	.45
<b>Wistaria praecox</b> (Isaai), graft, 2 1/2-in. pot		.30	.25
<b>Wistaria Shironoda</b> , graft, 2 1/2-in. pot		.30	.25
<b>Wistaria Shironoda</b> , 2-yr. gr., 3-in. pot		.40	.35

## NEW, TALL, NARROW and HARDY TAXUS

Sturdy columnar types, that grow narrow and compact. Excellent for confined plantings and very hardy. Ask for descriptive folder and photo-print.

<b>Grandifolia</b> , bigleaf yew	<b>Robusta</b> , obelisk	
<b>Pilaris</b> , pillar	<b>Stricta</b> , narrowbush	
<b>Pyramidalis</b> , pyramidal	<b>Veridis</b> , grass-green	
	Each	Each
	10 to 24	25 to 300
r.c., 4 ins. up.....	\$0.15	\$0.12
1-yr., 2 1/2-in. pot.....	.25	.20
3-yr. XX, 6 to 9 ins.....	.60	.50
3-yr. XX, 9 to 12 ins.....	.75	.60
3-yr. XX, 12 to 15 ins.....	1.00	.70

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400 acres

## SURPLUS STOCK IN STORAGE OFFERED FOR SPRING

Write us for quotations.

### APPLES, STD.

2-yr. and 1-yr.

2-yr.: 11/16-in., 9/16-in., 7/16-in.

1-yr.: 3 1/2 ft. and up, 3 to 3 1/2 ft., 2 to 3 ft.

Anoka  
Baldwin  
Cortland  
Delicious  
Dbl. Red Delicious  
Dolgo Crab  
Early McIntosh  
Fall Pippin  
Golden Russet  
Hyslop Crab  
Jonathan, Dk. Red  
King

McIntosh  
Milton  
Northern Spy  
Red Duchess  
R. Northern Spy  
R. I. Greening  
Solid Red McIntosh  
Stayman Red  
Wealthy  
Webster  
Yellow Delicious  
Yellow Transparent

### PEARS, STD.

2-yr. and 1-yr.

2-yr.: 11/16-in., 9/16-in., 7/16-in.

1-yr.: 3 1/2 ft. and up, 3 to 3 1/2 ft., 2 to 3 ft.

Bartlett  
Beurre Bosc  
Clapp Favorite  
Gorham

Kieffer  
Seckel  
Seedless  
Sheldon

### PEACHES, 1-yr.

11/16-in., 9/16-in., 7/16-in., 5/16-in.  
Golden Jubilee

Elberta

### CHERRIES, SWEET

2-yr. and 1-yr.

2-yr.: 11/16-in., 9/16-in., 7/16-in.

1-yr.: 3 1/2 ft. and up, 3 to 3 1/2 ft., 2 1/2 to 3 ft., 18 to 24 ins.

August Supreme  
Black Tartarian  
Emperor Francis  
Lambert

Napoleon  
Sweet September  
Windsor

### CHERRIES, SOUR

2-yr. and 1-yr.

2-yr.: 11/16-in., 9/16-in., 7/16-in.

1-yr.: 33 ins. and up, 24 to 30 ins., 18 to 24 ins., 15 to 18 ins.

Montmorency

### PLUMS on PLUM ROOT

2-yr. and 1-yr.

2-yr.: 11/16-in., 9/16-in., 7/16-in.

1-yr.: 3 to 4 ft., 3 ft. and up, 33 ins., 2 to 3 ft.

Fellenberg  
Formosa  
German Prune  
Lombard

Reine Claude  
Shropshire Damson  
Stanley

### DWARF PEARS

2-yr. and 1-yr.

2-yr.: 5/8-in., 1/2-in., 3/8-in.

1-yr.: 5/8-in., 1/2-in.

Bartlett  
Clapp Favorite

Duchess  
Seckel

### QUINCE

2-yr. and 1-yr.

2-yr.: 5/8-in., 1/2-in.

1-yr.: 3 1/2 ft. and up

Orange

### DWARF PLUM, 2-yr.

11/16-in., 9/16-in.

Abundance

Fellenberg

### SHRUBS, 2 yrs. old

2 to 3 ft., 18 to 24 ins. and 15 to 18 ins.

Buddlein White Cloud  
Callicarpa Purpurea  
Cydonia Japonica  
Deutzia Lemolne

Deutzia Pride of Rochester  
Forsythia Fortunei  
Hydrangea, P. G.  
Viburnum Opulus Sterile

### ORNAMENTALS

American Elm, 6 to 8 ft., 8 to 10 ft.

Poplar, Lombardy, 5 to 6 ft., 6 to 8 ft.

Redfield Flowering Crab, 4 to 5 ft.

### WANTED

Kindly quote on all or any part. If you can not furnish sizes wanted, quote on size you can supply.

#### ORNAMENTALS

100 Yoshino or Kwanzan Cherry,

4 to 5 ft. or 5 to 6 ft.

100 Cutleaf Weeping Birch,

5 to 6 ft. or 6 to 7 ft.

100 Golden Chain Tree,

4 to 5 ft. or 5 to 6 ft.

#### SHRUBS:

100 Philadelphus Aureus,

12 to 15 ins. or 15 to 18 ins.

a background for the generous display of pink darts, white-edged at the base, in September and October. After one has grown these two plants, other types of cyclamens will offer him more interesting gardening experiences, and twenty or more species and numerous varieties are mentioned in the literature.

### An Ornamental Dock.

The docks and sorrels are not, generally speaking, of great ornamental value and are inclined to be weedy. One exception is the western species, *Rumex venosus*, which is showy in its large, red-veined valves during the fruiting season. Another, *R. flexuosus*, which I grew several years ago from seeds, with no information as to its characters or origin, proved to be an attractive plant because of its unusual foliage effects. It spread out a carpet of Oriental richness in red, crimson, copper and brown, over which were displayed short flower stems of a bronze-mahogany. The colors are harmonious and pleasing to all who like colored foliage, furnishing a good carpet for dry, sunny places not obtainable so easily from any other plant of which I know. It should sell in the neighborhood nursery where gardeners can see the plant growing. It is easily grown from seeds and does not require much care in the garden.

### A Japanese Violet.

While talking to an Ohio nurseryman last summer, I found that he believed violets to be poor merchandise for the neighborhood grower. That may be true of the general run of violets, but I think he and others would change their minds if they sifted the chaff from the grain and concentrated on a few worthwhile kinds.

High on the list of good ones I would place the little Japanese, *Viola eizanense*, or by preference, its white form *alba*. Superficially, when it is out of flower, it reminds one of the bird's-foot violet, one of the aristocrats of the clan. When it is in bloom, it is different, however; the flowers are large and showy, like a glorified *V. sylvestris rosea* in the rose-colored type and pure white in variety *alba*. The flowers are borne on 5-inch stems, well above the foliage.

Many Japanese plants, particularly alpine, have special needs which we sometimes find difficult to supply in the climate of the middle west. And this violet runs true to that form. It is not, however, too difficult to trust to the hands of the ordinary gardener if he can give it a slightly

[Continued on page 52.]

**MALONEY BROS. NURSERY CO., Inc.**  
DANVILLE, NEW YORK



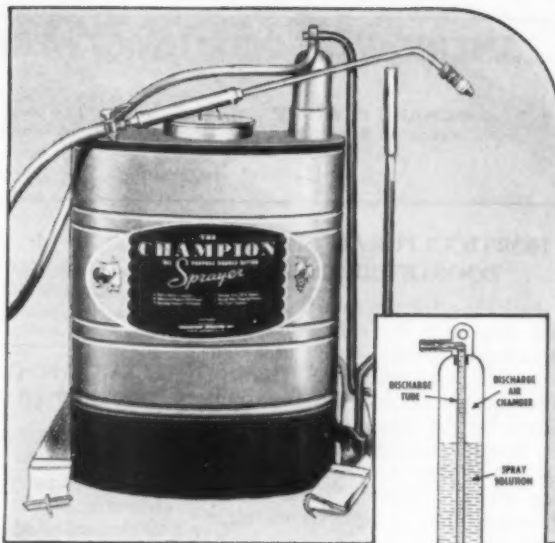
## For Spraying Well Done . . .

# The CHAMPION

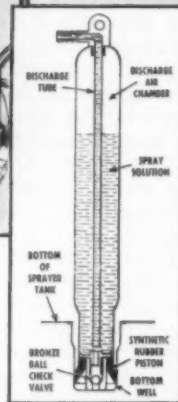
### PORTABLE, ALL-BRASS SPRAYER

Wherever there is any amount of spraying of any liquid, solution or acid to be done, you can do it well and quickly with the Champion hand-powered, knapsack sprayer. It is the product of more than a quarter century of scientific development, precision manufacture, and experimentation with leading colleges and growers. Many thousands are in daily satisfactory use throughout the world.

The Champion is the one unit that combines all the desirable qualities of unusual power, simple operation, effective control, continuous agitation, and long life.



Discharge air chamber eliminates pulsation of outgoing liquid and thereby provides a continuous flow and a greater distance of spray in either a straight stream or fine mist.



Champion fits snugly on operator's back as he walks through greenhouse spraying to right or left, up or down.

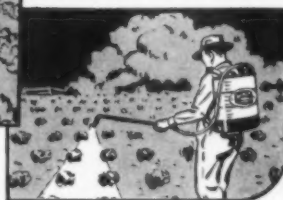


Here's power to reach trees as high as 35 ft.



Reach under lowest plants without bending over.

Cover large area of crops quickly and effectively.



### SPECIAL CHAMPION BOOM for FAST WEED SPRAYING

For effective weed control, use Champion with concentrated weed killer solution and Boom No. 89. Boom has two Tee-Jet non-corrosive nozzles equipped with 100-mesh screen. Operator can spray path 36" wide wherever he can walk at rate of 4 gals. of concentrated solution per acre.



Champion is an all-purpose, portable sprayer. With it you can spray

**INSECTICIDES • FUNGICIDES • ACIDS • OIL • DDT  
WATER PAINT • WEED KILLER SOLUTIONS**

Virtually any liquid can be used without affecting the synthetic rubber piston and the non-corrosive brass parts. There can be no clogging of the nozzle because the liquid is filtered twice and kept well agitated. Tank is all-brass. Pressure is confined

to the piston cylinder, which is made of heavy, seamless brass tubing. Champion flexibility enables you to spray a fine mist or a 35-foot stream up, down, or in any direction. Form-fitting tank is held comfortably on operator's back by adjustable straps.

See Your Dealer or Send Coupon Now for Free Literature

**CHAMPION SPRAYER CO. 6537 Heintz Ave. DETROIT 11, MICH.**  
Manufacturers of Portable Sprayers and Dusters

Champion Sprayer Co.  
6537 Heintz Ave., Detroit 11, Mich.

**Mail Now for Complete Details**

Please send me without obligation free literature and prices on

( ) Sprayer No. 1

( ) Complete Line of Sprayers and Dusters

We are interested

( ) As possible user

( ) In re-selling

Firm

Signed

Address

City

State

## AMERICAN ASSOCIATION OF NURSERYMEN

RICHARD P. WHITE,  
EXECUTIVE SECRETARY



636 SOUTHERN BLDG.,  
WASHINGTON 5, D. C.

### HORTICULTURAL GRADES BOOKLET REVISED.

Including for the first time grades and standards for one-year apple, strawberry plants and asparagus roots, the 1949 edition of "Horticultural Standards" has just been published by the American Association of Nurserymen, Inc., Washington, D. C. This edition also is the first one which includes a series of line drawings illustrating various measurements referred to in the text.

Begun at the annual meeting of the American Association of Nurserymen in 1923, "Horticultural Standards" has been revised and expanded as the need became evident. The publishers recommend the adoption of the revised code of standards by all users of nursery stock.

Specifications and grades for all types of nursery stock, including shade trees, deciduous shrubs, evergreens, roses, vines, fruit trees, small fruits, asparagus crowns, lining-out stock and trees for forest planting, are featured in the book. Balling and burlapping specifications also are recommended in the last section.

Members of the committee on horticultural standards of the American Association of Nurserymen are: Chairman, Richard L. Holmes, Jackson & Perkins Co., Newark, N. Y.; John Siebenthaler, Siebenthaler Co., Dayton, O.; E. P. Dering, Peterson & Dering, Scappoose, Ore.; Carl Junginger, McKay Nursery Co., Madison, Wis.; Carl Shamburger, Carl Shamburger Nursery, Tyler, Tex., and George Harris, Princeton Nurseries, Princeton, N. J.

### DEADLINE FOR A. A. N. TRAIN RESERVATIONS.

William J. Smart, transportation chairman of the American Association of Nurserymen, has announced that May 15 is the deadline for reservations for the special trains from Chicago to San Francisco for the A. A. N. convention in July. Since all space must be allotted and confirmed between May 15 and June 1, the deadline will not be extended.

The special train which will return from San Francisco to Chicago via Portland, Ore.; Seattle, Wash., and Canada is completely sold out, ac-

cording to Mr. Smart, and reservations for this train can be made only on a tentative basis and will be filled if cancellations are received.

### A. A. N. CONVENTION ENTERTAINMENT PLANS.

At a recent meeting of the convention committees Herman Sandkuhle, Sunset Nursery, Oakland, Calif., chairman of the entertainment committee, revealed some of the entertainment features of the program to be enjoyed at the seventy-fourth annual convention of the American Association of Nurserymen, July 17 to 21 at San Francisco.

As the convention trains pull into Oakland the afternoon of July 16, they will be greeted by local nurserymen and serenaded by a band which will also accompany the A. A. N. travelers on the ferry trip across the bay to San Francisco.

No meetings have been scheduled

for Sunday, July 17, but the entertainment committee will provide automobiles or other transportation for sight-seeing trips to the most scenic spots of San Francisco. Definitely scheduled is a trip to Golden Gate park, the city's famous horticultural show place. Arrangements have been made with park officials to have members of the staff escort the A. A. N. sight-seers through the most interesting and educationally valuable areas of the park.

An all-day boat trip on San Francisco bay is planned as the highlight of the sight-seeing during the convention. At the annual past presidents' banquet entertainment will be provided mainly by the Sacramento Chamber of Commerce Singers, a group with a state-wide reputation for fine entertainment. As a rule, this group is available only to conventions held at Sacramento, and on the few occasions that it has performed publicly it has had sold-out houses.

Summer temperatures at San Francisco are not often so warm as

## CHINESE CHESTNUT TREES

SPECIALLY SELECTED STRAINS  
HIGHLY BLIGHT-RESISTANT  
SIMILAR TO OUR OLD  
MOUNTAIN CHESTNUT

	Each	Each
	per 10	per 100
2 to 3 ft.....	\$0.85	\$0.70
3 to 4 ft.....	1.00	.90
4 to 5 ft.....	1.25	1.10
5 to 6 ft.....	1.65	1.50

These are nicely rooted, and larger sizes are well branched stock that will please your customers.

Can supply in large quantities now while assortment is complete.

**BOUNTIFUL RIDGE NURSERIES**  
Princess Anne, Md.

## EVERGREENS

Hardy, northern, collected stock.

Canadian Hemlock  
American Arborvitae  
Balsam Fir

	Per 100	Per 1000
2 to 4 ins., sdgs.....	\$0.80	\$ 5.00
3 to 6 ins., sdgs.....	1.50	10.00
6 to 9 ins., sdgs.....	2.50	15.00
9 to 12 ins.....	6.00	40.00
12 to 18 ins.....	8.00	65.00

All first-quality stock, well rooted and packed in sphagnum moss.

Cash, please.

**R. M. COLE**

Box 37 CHARLOTTE, VT.

The HOME of  
Better New Perennials  
PLANTS THAT PAY THEIR WAY!

Originators—Disseminators

**CORLISS BROS. INC.,  
NURSERIES**

17 Reynard St.

Gloucester, Mass.

## AMERICAN HOLLY

Special sale of 2,000 selected nursery stocks, several named varieties, all female, 1 to 5 feet. Any reasonable offer accepted from the trade.

Write for appointment.

**WILMAT HOLLY**

P. O. Box 37  
CHESTERTOWN, MD.

# CALIFORNIA ROSEBUSHES

Available out of Refrigerated Storage at Detroit.  
Immediate Delivery. Subject to prior sale.

		Per 10	Per 100	Per 1000		
No. 1, 2-year, field-grown.....		\$5.00	\$45.00	\$400.00		
No. 1½, 2-year, field-grown.....		4.25	37.50	325.00		
<b>RED VARIETIES</b>						
General MacArthur.....	No. 1	No. 1½				
Hadley.....	120	190				
Hoosier Beauty.....	1020	130				
Night.....	950	80				
Red Hoover.....	520	...				
<b>PINK VARIETIES</b>						
Dainty Bess.....	990	...				
Edith Nellie Perkins.....	...	170				
J. Otto Thilow.....	470	150				
Lulu.....	960	...				
Mme. Joseph Perraud.....	...	200				
Mrs. R. M. Finch.....	120	...				
Rose Marie.....	470	80				
<b>YELLOW VARIETIES</b>						
Duchess of Atholl.....	300	...				
Golden Sastago.....	320	50				
Lady Forteviot.....	100	...				
Sister Therese.....	...	170				
<b>TWO-TONE VARIETIES</b>						
Condesa de Sastago.....	380	...				
Contrast.....	180	...				
Los Angeles.....	270	...				
Miss Rowena Thom.....	170	...				
Talisman.....	150	...				
Tango.....	630	...				

## PATENTED VARIETIES

Price per each					Price per each				
		10 up	20 up	250 up			10 up	20 up	250 up
No. 1					No. 1				
210	Heart's Desire (Pat. 501)	\$0.90	\$0.75	...	80	Pinkie (Pat. 712)	\$0.90	\$0.75	...
80	Mary Hart (Pat. 9)	.70	.60	...	510	Santa Anita (Pat. 539)	.70	.60	\$0.50
180	Mme. Chiang Kai-shek (Pat. 664)	.90	.75	...	300	Texas Centennial (Pat. 162)	.90	.75	.65
260	Mme. Henri Guillot (Pat. 337)	.90	.75	\$0.60	30	Cl. Capt. Thomas (Pat. 393)	.90	.75	...

NOW BOOKING FOR 1950 DELIVERY. SEND FOR YOUR COPY OF OUR LIST OF STANDARD AND PATENTED VARIETIES.

### PACKAGED ROSES FOR COUNTER SALES

Individually wrapped, waxed and labeled. Send for list, or try our Special Offer of 96 assorted No. 1 Roses (24 varieties) for \$52.80; or 96 assorted No. 1½ Roses for \$38.40. F.O.B. Detroit.

### PACKAGED GLADIOLI FOR COUNTER SALES

Each carton has attractive colored picture and planting instructions. 12 bulbs per carton. Mixed colors, 1¼-in. and up. Price: 37c per carton.

### TUBEROUS-ROOTED BEGONIAS

Belgian-grown. Colors available: Scarlet, Yellow, Orange, Salmon, White, Crimson, Copper, Rose and Mixed.

	Per 100	Per 1000
Double (Camellia) or single types.		
1½ to 2-in.....	\$ 9.50	\$ 80.00
2-in. and up.....	14.00	125.00

### AMARYLLIS

Giant American Hybrids. Mixed colors only.

	Per 100	Per 1000
2¼ to 2½-in.....	\$13.00	\$120.00
2½ to 2¾-in.....	15.00	140.00
2¾ to 3-in.....	20.00	175.00

### PEONIES

Strong 3 to 5-eye divisions.

\$3.00 per 10, \$25.00 per 100, \$225.00 per 1000.

Delicatissima. Light pink  
Duchesse d'Orleans. Pink  
Edulis Superba. Old rose  
Queen Victoria. White  
Reine Des Fleurs. Cherry

### BLEEDING HEARTS

Dielytra spectabilis.  
True old-fashioned type.

	Per 100	Per 1000
3 to 5 eyes.....	\$30.00	\$260.00
5 to 8 eyes.....	40.00	360.00

TERMS: 2% 10 days; 30 days net, if credit is established. Cash with order earns 3% discount. F.O.B., Detroit.

Subject to prior sale. 250 or more at 1000 rate.

### IMPORTED JAPANESE LILIES

	Per 100	Per case
Rubrum. 7 to 9-in., 250 to case.....	\$33.00	\$77.00
8 to 9-in., 200 to case.....	35.00	65.00
9 to 10-in., 140 to case.....	38.00	50.00
9 to 11-in., 125 to case.....	43.00	50.00
Auratum. 8 to 9-in., 200 to case.....	35.00	65.00
9 to 10-in., 140 to case.....	40.00	52.50

### LILIUM REGALE

American-grown.

	Per 100	Per case
4 to 5-in., 750 per case.....	\$ 5.00	\$35.00
5 to 6-in., 500 per case.....	6.50	30.00
6 to 7-in., 250 per case.....	9.00	22.00
7 to 8-in., 250 per case.....	12.00	27.00
8 to 9-in., 200 per case.....	16.00	30.00

### CANNAS

Northern-grown. Strong divisions.

\$6.00 per 100. \$55.00 per 1000.

City of Portland. Pink.  
King Humbert. Red, bronze foliage.  
Yellow King Humbert. Yellow, green foliage.  
The President. Scarlet. Green foliage.

### DAHLIAS

A special collection of 100 strong divisions, at least 10 varieties.  
Packed in Cellophane and Peat for Counter Sales.  
Price: \$17.50 per collection.

## GROWERS EXCHANGE, Inc.

BOX 35, BRIGHTMOOR STATION  
DETROIT 23, MICHIGAN  
PHONE: VERMONT 8-4245



## LINING-OUT STOCK — SPRING, 1949



Transplanted Liners, from Field Beds

Juniperus glauca hetzi X, 6 to 10 ins. Andorra Juniper X, 6 to 9 ins. Irish Juniper X, 6 to 8 ins. Pfitzer Juniper X, 5 to 8 ins.

### 2-year and 3-year, field-grown plants

Our Spring, 1949, Catalog is out now, write for it.

X indicates number of times transplanted.

	Each per 100	Each per 1000
Althaea (Hibiscus) syriacus, sdig., 1-yr., 4 to 10 ins.	\$.04	\$.03
Azalea Ghent hybrid, XX, 4 to 6 ins.	.25	.23
Azalea kaempferi hybrid, X, 3 to 6 ins.	.15	.13
Azalea mollis, XX, 4 to 6 ins.	.25	.23
Azalea mollis, XX, 6 to 9 ins.	.45	.40
Berberis thunbergii, X, 4 to 8 ins.	.04	.03
Buddleia davidi superba, sdig., 1-yr.	.05	..
Buxus microphylla koreana, X, 3 to 5 ins.	.20	..
Buxus sempervirens, X, 3 to 4 ins.	.12	..
Buxus suffruticosa, X, 2 to 4 ins.	.12	..
Calycanthus floridus, sdig., 6 to 10 ins.	.04	..
Celtis occidentalis, sdig., 6 to 12 ins.	.04	..
Chamaecyparis filifera, 4 to 6 ins.	.18	..
Chamaecyparis filifera aurea, X, 5 to 8 ins.	.18	.15
Chamaecyparis lawsoniana, sdig., 3 to 5 ins.	.04	.03
Chamaecyparis lawsoniana allum, X, 4 to 6 ins.	.15	.13
Chamaecyparis lawsoniana allum, X, 6 to 9 ins.	.20	.18
Chamaecyparis lawsoniana pendula, sdig., 1-yr., 4 to 6 ins.	.05	.04
Chamaecyparis plumosa, X, 6 to 9 ins.	.18	..
Chamaecyparis plumosa aurea, X, 4 to 6 ins.	.18	.16
Euonymus carrierei, X, 6 to 8 ins.	.10	.08
Euonymus carrierei, XX, 8 to 12 ins.	.15	.14
Euonymus coloratus, X, 4 to 8 ins.	.08	.07
Euonymus europaeus, sdig., 8 to 12 ins.	.10	..
Euonymus fortunei erecta, X, 4 to 8 ins.	.10	.08
Euonymus patens, X, 4 to 8 ins.	.10	.08
Hex crenata, X, 4 to 6 ins.	.17	.16
Hex crenata bullata, XX, 4 to 6 ins.	.17	..
Hex rotundifolia, XX, 4 to 6 ins.	.18	.17
Juniper, Andorra, X, 6 to 9 ins.	.17	.16
Juniper, Andorra, XX, 6 to 9 ins.	.24	.23
Juniperus chinensis pfitzeriana, Hill's Golden, X, 4 to 6 ins.	.22	.20
Juniperus chinensis pfitzeriana, X, 5 to 8 ins.	.18	.17
Juniperus glauca hetzi, X, 4 to 6 ins.	.13	.12
Juniperus glauca hetzi, X, 6 to 10 ins.	.18	.17
Juniperus horizontalis glauca, X, 6 to 10 ins.	.18	.16
Juniper, Irish, X, 3 to 5 ins.	.14	.13
Juniper, Irish, X, 5 to 8 ins.	.18	.17
Larix europaea, sdig., 1-yr., 2 to 5 ins.	.03	.02
Leucothoe catesbaei, X, 2 to 4 ins.	.12	.11
Pieris japonica, XX, 5 to 8 ins.	.45	.40
Pieris mariana, XX, 8 to 12 ins.	.50	..
Pinus nigra, sdig., 1-yr., 2 to 4 ins.	.04	.03
Poplar, Lombardy, 2-yr., 2 to 4 ft.	.08	.06
Rhododendron hybrids, field-grown stock,		
XX, 4 to 6 ins.	.35	.28
XX, 6 to 9 ins.	.65	.55
Taxus capitata, X, 4 to 6 ins.	.14	.13
X, 6 to 8 ins.	.18	.17
XX, 4 to 6 ins.	.18	.17
Taxus cuspidata, X, 4 to 6 ins.	.13	.12
X, 6 to 8 ins.	.18	.17
XX, 4 to 6 ins.	.18	.17
Thuja elegantissima lutea, XX, 4 to 6 ins.	.18	.17
Thuja elegantissima lutea, XX, 6 to 9 ins.	.22	.20
Thuja cilivangeriana, X, 6 to 8 ins.	.18	.15
Thuja globosa, X, 3 to 5 ins.	.12	.11
X, 5 to 8 ins.	.17	.16
XX, 6 to 9 ins.	.22	.20
Viburnum opulus nana, X, 2-yr., 2 to 5 ins.	.10	.09

Orders for less than 25 of a variety not accepted. 25 at 100 rate; 300 at 1000 rate. 500 plants in variety of not less than 100 each at 1000 rate. 10% discount on orders of 5000 plants and over.

Terms: Net cash with order, or 1/3 cash with order and balance C.O.D. Packing free when cash accompanies order. All shipments sent by railway express, unless parcel post specified and remittance to cover included.

Japanese beetle certification provided when specified.

## PALLACK BROS. NURSERIES, Inc.

(On Highway 19, 31 mi. north of Pittsburgh, Pa.)

R.F.D. 1

Phone: Zellenople 476-J 21

HARMONY, PA.

those in other parts of the country; so the committee advises that daytime temperatures may be cool and that topcoats are the rule in the evening.

### FEATURE A. A. N. EACH MONTH ON RADIO SHOW.

The first Saturday of each month is American Association of Nurserymen day on the Frank Atwood program broadcast at 6:30 a. m. over station WTIC, Hartford, Conn.

Speakers and their subjects for the rest of the year include: April 2, "Plant American," by Richard P. White, A. A. N. executive secretary; May 7, "Fruit Trees," by Joel Barnes; June 4, "What the American Association of Nurserymen Is Doing for You," by Howard C. Taylor, A. A. N. president; July 2, "Landscape Composition," by Homer K. Dodge; August 6, "Lawns," by Raymond Hopkins; September 3, "Living Fences," by Charles Burr; October 1, "Fall Planting," by Edward Kelley; November 5, "Putting Your Plants to Bed for the Winter," by William Scott, and December 3, "Trees," by Edgar M. Brown.

### A. A. N. ON TELEVISION.

The A. A. N. made its debut on television February 16 with a half-hour program over General Electric's television station, WRBG, Schenectady, N. Y. President Howard C. Taylor, Eastview, N. Y., spoke briefly, and R. P. Korbobo, associate extension specialist in horticulture, Rutgers University, New Brunswick, N. J., and secretary of the New Jersey Association of Nurserymen, presented a clever visual demonstration of correct landscaping methods, using special cloth models. Mr. Korbobo also gave this talk on a 15-minute television show February 26 over the Columbia Broadcasting System, with the A. A. N. receiving full mention.

ANNOUNCEMENT has been made by W. B. Clarke & Co., San Jose, Calif., that its annual lilac show will be held as usual at the nursery in April. The sixteenth volume of "Garden Aristocrats" has been mailed by W. B. Clarke & Co. Modified to be a miniature handbook covering one flower group thoroughly, this year's volume features lilacs. When readers were asked to comment on the continuation or discontinuation of the booklet last year, response was so favorable that the firm decided to continue the publication in modified form.

# NEW LOWTHER NURSERY TREE PLANTER!



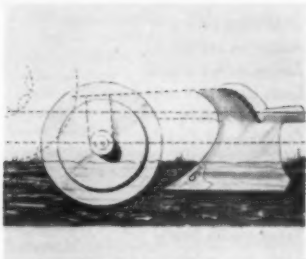
## NEW DESIGN OF PROVED LOWTHER TREE PLANTER

Design basis for the new Nursery Planter is the famous, proved Lowther Tree Planter (left)—used by the U. S. Forest Service and by many of the largest forest-operating companies. The Lowther Nursery Planter is especially adapted for planting a wide variety of big-rooted stock. Chief features are the new, enlarged plow—open-rear frame for clear passage of long stock—and seats for 2 operators.



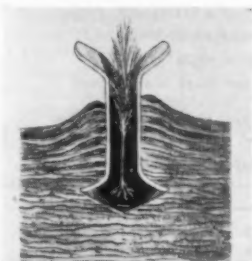
## WORKS IN ANY TYPE OF SOIL

A heavy 28-inch disc coupler mounted 1 inch in front of the revolutionary plow adapts the Lowther Nursery Planter to any soil condition. As shown at left, the coupler slices down to a depth of 9 inches through any soil or heavy sod, cutting roots to provide easy operation of the plow. It rides over any obstacle too tough to cut—and raises the plow out of the ground until the obstacle is cleared.



## UNIQUE PLOW ACTION DOES NOT DISTURB SOIL

The specially designed plow operates at a depth of 8 inches and opens a 2-inch furrow, not by compressing the earth outward, but by lifting the entire section of soil upward and slightly outward, as shown in cross-section sketch at left. After the plow has moved forward the raised soil drops back into its original position. Then the trailing packing wheels compact the earth to completely close the furrow.



## SEND COUPON FOR FULL FACTS

HARRY A. LOWTHER CO., Inc.  
INDUSTRY AVENUE  
JOLIET, ILL.

Please send me, without obligation, full information (including price and specifications) on the Lowther Nursery Planter.

NAME.....

ADDRESS.....

CITY..... STATE.....

## Does the Work of 15 Men

No other machine or method equals the new Lowther Nursery Planter for fast, successful planting of a wide variety of rooted stock. With a 3-man crew it does the work of 15 men planting by hand. This machine plants 10,000 trees per day in unprepared soil in the forest. In a nursery, this number increases almost any figure depending on the soil.

The unique plow action plants stock for maximum survival in any soil. Soil is not rolled, turned or compressed—it is simply lifted vertically a few inches as the plow action opens a 4-inch planting slot.

As the stock is placed in the hollow planting shoe, the plow moves forward, allowing the soil to fall into its original position around the tree roots. The trailing wheels then firmly compact the earth to complete the perfect planting cycle.

BY THE MAKERS OF THE FAMOUS

# LOWTHER

## C-SAW

# This Business of Ours

*Reflections on the Progress and Problems of Nurserymen*

By E. Sam Hemming

## THE USE OF TRADE-MARKS.

The nursery industry as a whole does not make the use of copyrighted trade-marks that it might. These can be valuable sales assets; in some industries trade-marks are worth millions of dollars in advertising value. In one extreme case, that of the Hershey chocolate bar, the trade-mark is so well known that to many persons a chocolate bar has become synonymous with a Hershey bar. The value of this trade-mark is so great that little advertising is necessary.

There are at least two other famous trade-marks that have such a hold on our everyday conversation that they, too, have become synonymous with the product in general. The name, Kodak, used by the Eastman Kodak Co., is so well known that to the man in the street every folding camera is a Kodak, and the word can be found in the dictionary. Another famous trade-mark is Coca-Cola and the more widely used term "Coke." The latter became so popular with the consumer that the company had it copyrighted in self-defense.

A really great trade-mark must not only catch the fancy of the public, but must be original and novel. Unfortunately, one never knows until after it is presented if it will catch on. Perhaps one of the better known trade-marks in the nursery industry is the "Azaleamum" of R. M. Kellogg Co., Three Rivers, Mich. To customers from Maryland to Michigan the cushion chrysanthemum is an Azaleamum, and no amount of conversation will convince them that the plant is not a cross between an azalea and a chrysanthemum. This trade-mark is worth many thousands of dollars to the Kellogg firm. The next nursery trade-mark that I can call to mind is the "Star" rose varieties of Conard-Pyle Co., West Grove, Pa., an apt title applied to its products by the use of a small, celluloid, star-shaped label.

Other trade-marks that are of great value to the owners are "J. & P." of Jackson & Perkins Co., Newark, N. Y.; the Bear of Stark Bros. Nursery & Orchards Co., Louisiana, Mo., and the little Dutch windmill of the Wayside Gardens Co., Mentor, O. I am sure there are others, but they are perhaps less well known, at least to me.

Sometimes a long phrase printed

on a nursery catalog becomes a valuable trade-mark; I have always considered the slogan, "Everything for the Garden," used by Peter Henderson & Co., New York city, one of these.

As nurserymen become more conscious of the plant patent laws and take advantages of the opportunity to patent plants, they also will become more conscious of the desirability of copyrighted trade-marks. A trade-mark may be copyrighted after a period of undisputed and continued use through application to the United States patent office. If the patent office finds that there are no other users with prior claims, a copyright will be granted for a period of twenty years and will be renewable by ap-

## NORTHERN-GROWN LINING-OUT STOCK

Betula papyrifera	Per 100	Per 1000
1 to 2 ft.....	\$ 6.00	\$ 50.00
2 to 3 ft.....	8.00	70.00
3 to 4 ft.....	25.00	...
4 to 5 ft.....	40.00	...
Sugar Maple		
3 to 4 ft.....	25.00	200.00
4 to 5 ft.....	40.00	...
5 to 6 ft.....	60.00	...
Red Maple		
3 to 4 ft.....	10.00	80.00
4 to 5 ft.....	20.00	...
5 to 6 ft.....	35.00	...
Clethra alnifolia		
1 to 2 ft.....	5.00	45.00
Syringa vulgaris		
1 to 2 ft.....	6.00	50.00
Tsuga canadensis		
4 to 8 ins.....	4.00	25.00
8 to 12 ins.....	5.00	40.00
Thuja occidentalis		
3 to 6 ins.....	3.00	20.00
6 to 12 ins.....	5.00	40.00

All the above stock is first-quality, collected lining-out stock. Send for complete wholesale list.

ISAAC LANGLEY WILLIAMS

P. O. Box 352 EXETER, N. H.

## LILACS

French Hybrids and Standards in 30 best cut flower varieties.

1-yr. grafts, \$25.00 per 100; \$200.00 per 1000.

Ask for Descriptive List.

Also list of Taxus and other liners for Spring, 1949, shipment now ready.

DEERFIELD NURSERIES

DEERFIELD STREET P. O., N. J.

## AMERICAN NURSERYMAN

publication six months before it expires. Trade-mark rights lapse by default when not kept in continued use.

E. S. H.

## THE WEATHER.

We can certainly talk about the weather this winter in Maryland. While parts of the middle west and all of the west suffered from blizzard after blizzard, in Maryland we have been experiencing the mildest and wettest winter we have ever had.

All during the fall the weather was mild and open, during January we had only one night when the temperature fell below freezing and during February there were but two. An open winter is pleasant, and

## MAGNOLIAS

For spring delivery we offer Magnolia grafts from 2 1/4-in. pots, \$75.00 per 100; \$70.00 per 100 in lots of 500 or over.

Varieties:

Magnolia lennei, soulangeana, soulangeana Nigra, stellata, stellata Water Lily, rustica rubra.

Well established cuttings from 2 1/4-in. pots, \$15.00 per 100.

Chamaecyparis plumosa aurea

Juniperus sabina

Juniperus hibernica

Taxus baccata repandens

Taxus cuspidata

Taxus cuspidata nana

Taxus media spreading

Taxus media cliffoni

Taxus media hatfieldi

Taxus media henryi

Taxus media Moon's columnaris

Taxus media Vermeulen

Taxus media hicksi

Thuja occ. nigra

Thuja occ. lutea Mary Corey

## HESS' NURSERIES

MOUNTAIN VIEW, N. J.

## FOR 51 YEARS

Our business has been growing

Rhododendrons

Azaleas

Perennials, Roses

All Nursery Items

BOBBINK & ATKINS

E. RUTHERFORD, N. J.



# SURPLUS LIST

All stock listed is in storage ready for immediate shipment.

	Per 100	Per 1000		Per 100	Per 1000
Cherry, Montmorency, 11/16-in.	\$ 90.00		Privet, Ibolium, 12 to 18 ins., 3 br. up.	\$ 6.00	\$ 50.00
Cherry, Montmorency, 9/16-in.	80.00		Privet, Ibolium, 18 to 24 ins., 3 br. up.	8.00	60.00
Pear, Bartlett, 11/16-in.	80.00		Privet, Ibolium, 2 to 3 ft., 4 br. up.	10.00	80.00
Pear, Kieffer, 11/16-in.	80.00		Privet, Ibolium, 3 to 4 ft., 4 br. up.	15.00	125.00
Pear, Kieffer, 9/16-in.	65.00		Privet, Regel, 12 to 18 ins.	15.00	
Grape, Concord, 2-yr., No. 1	12.00	\$ 100.00	Privet, Regel, 24 to 30 ins.	32.00	
Grape, Niagara, 2-yr., No. 1	16.00		Spiraea Arguta, 12 to 18 ins.	18.00	
Elm, American, 5 to 6 ft.	50.00		Spiraea Arguta, 18 to 24 ins.	25.00	
Elm, American, 6 to 8 ft.	75.00		Spiraea Arguta, 2 to 3 ft.	30.00	
Elm, American, 8 to 10 ft.	110.00		Spiraea Billiardii, 12 to 18 ins.	12.00	100.00
Elm, Chinese, 5 to 6 ft.	50.00		Spiraea Billiardii, 18 to 24 ins.	15.00	125.00
Elm, Chinese, 6 to 8 ft.	75.00		Spiraea Billiardii, 2 to 3 ft.	20.00	150.00
Elm, Moline or Vase, 1 1/4 to 1 1/2 ins.	350.00		Spiraea Froebeli, 12 to 15 ins.	15.00	
Elm, Moline or Vase, 1 1/2 to 2 ins.	400.00		Spiraea Froebeli, 18 to 24 ins.	25.00	
Elm, Moline or Vase, 2 to 2 1/2 ins.	500.00		Spiraea Froebeli, 24 to 30 ins.	30.00	
Poplar, Lombardy, 5 to 6 ft.	25.00		Spiraea Opulifolia Aurea, 12 to 18 ins.	15.00	125.00
Poplar, Lombardy, 6 to 8 ft.	40.00		Spiraea Opulifolia Nana, 12 to 18 ins.	15.00	
Poplar, Lombardy, 8 to 10 ft.	50.00		Spiraea Opulifolia Nana, 2 to 3 ft.	30.00	
Sycamore, American, 5 to 8 ft.	100.00		Spiraea Vanhouttei, 18 to 24 ins.	15.00	125.00
Sycamore, American, 8 to 10 ft.	140.00		Spiraea Vanhouttei, 2 to 3 ft.	25.00	200.00
Willow, Pussy, 18 to 24 ins.	20.00		Spiraea Vanhouttei, 3 to 4 ft.	30.00	
Willow, Pussy, 2 to 3 ft.	25.00		Snowberry, Red, 12 to 18 ins.	12.00	100.00
Taxus Capitata, 30 to 36 ins., B&B.	800.00		Snowberry, Red, 18 to 24 ins.	15.00	125.00
Taxus Capitata, 36 to 42 ins., B&B.	1000.00		Snowberry, Red, 2 to 3 ft.	20.00	
Almond, Pink-flowering, 12 to 18 ins.	25.00		Tamarix Amurensis or Gallica, 18 to 24 ins.	20.00	
Almond, Pink-flowering, 18 to 24 ins.	30.00		Tamarix Amurensis or Gallica, 2 to 3 ft.	25.00	
Althaea, Bush, assorted colors, 12 to 18 ins.	10.00	75.00	Tamarix Amurensis or Gallica, 3 to 4 ft.	30.00	
Althaea, Bush, assorted colors, 18 to 24 ins.	15.00	125.00	Viburnum Dentatum, 18 to 24 ins.	25.00	
Althaea, Bush, assorted colors, 2 to 3 ft.	20.00	150.00	Viburnum Dentatum, 2 to 3 ft.	30.00	
Althaea, Bush, assorted colors, 3 to 4 ft.	25.00		Viburnum Lantana, 12 to 18 ins.	20.00	
Althaea, Tree Form, assorted colors, 3 to 4 ft.	40.00		Viburnum Lantana, 12 to 18 ins.	15.00	
Althaea Coelestis, 12 to 18 ins.	15.00		Viburnum Lantana, 18 to 24 ins.	20.00	
Althaea Coelestis, 18 to 24 ins.	20.00		Viburnum Lantana, 2 to 3 ft.	25.00	
Barberry, Thunbergi, 15 to 18 ins.	20.00	180.00	Viburnum Lantana, 3 to 4 ft.	35.00	
Barberry, Thunbergi, 18 to 24 ins.	25.00	220.00	Viburnum Lantana, 4 to 5 ft.	45.00	
Barberry, Thunbergi, 24 to 30 ins.	30.00	280.00	Weigela Eva Rathke, 12 to 18 ins.	25.00	200.00
Barberry, Red-leaved, 12 to 15 ins.	20.00		Weigela Eva Rathke, 18 to 24 ins.	30.00	250.00
Barberry, Red-leaved, 15 to 18 ins.	30.00		Weigela Rosea, 12 to 18 ins.	15.00	
Barberry, Red-leaved, 18 to 24 ins.	35.00		Weigela Rosea, 18 to 24 ins.	20.00	
Buddleia, Charming, Pink, 2-yr., No. 1	25.00		Ampelopsis Veitchi, 2-yr., No. 1	25.00	
Buddleia, Charming, Pink, 2-yr., Medium	20.00		Honeysuckle, Halliana, 2-yr., No. 1	16.00	140.00
Cornus Sibirica, 18 to 24 ins.	20.00	150.00	Lycium Chinense, 2-yr., No. 1	20.00	150.00
Cornus Sibirica, 2 to 3 ft.	25.00	200.00	Polygonum Auberti, 2-yr., No. 1	30.00	
Cornus Sibirica, 3 to 4 ft.	30.00	250.00	Roses, Bush, 2-yr., XX	60.00	500.00
Cornus Sibirica, 4 to 5 ft.	40.00		Roses, Bush, 2-yr., No. 1	40.00	350.00
Cornus Lutea, 12 to 18 ins.	15.00		Roses, Dwarf Polyantha and Floribunda, 2-yr., XX	50.00	
Cornus Lutea, 18 to 24 ins.	20.00		Roses, Dwarf Polyantha and Floribunda, 2-yr., No. 1	40.00	
Cornus Lutea, 2 to 3 ft.	30.00		Roses, Dwarf Polyantha and Floribunda, 2-yr., No. 1 1/2	35.00	
Cornus Lutea, 3 to 4 ft.	40.00		Rosa Hansa, 2 to 3 ft.	40.00	300.00
Forsythia Fortunei, 12 to 18 ins.	15.00	125.00	Rosa Hansa, 18 to 24 ins.	35.00	250.00
Forsythia Fortunei, 18 to 24 ins.	20.00	150.00			
Forsythia Fortunei, 2 to 3 ft.	30.00	250.00			
Forsythia Spectabilis, 18 to 24 ins.	20.00	150.00			
Forsythia Spectabilis, 2 to 3 ft.	30.00	250.00			
Honeysuckle, Grandiflora Rosea, 3 to 4 ft.	35.00				
Honeysuckle, Grandiflora Rosea, 4 to 5 ft.	45.00				
Honeysuckle, Morrowi, 3 to 4 ft.	35.00				
Honeysuckle, Morrowi, 4 to 5 ft.	45.00				
Honeysuckle, Zabeli, 18 to 24 ins.	20.00	150.00			
Honeysuckle, Zabeli, 2 to 3 ft.	30.00	250.00			
Hydrangea A. G., 12 to 18 ins.	25.00				
Hydrangea A. G., 18 to 24 ins.	40.00				
Hydrangea P. G., 2 to 3 ft.	50.00				
Hydrangea P. G., 3 to 4 ft.	60.00				
Lilac, French, 12 to 18 ins.	25.00				
Edward Harding					
Chas. X					
Marie Le Gray					
Pres. Poincalre					
Philadelphus Pyramidalis, 12 to 18 ins.	15.00	125.00			
Philadelphus Pyramidalis, 18 to 24 ins.	20.00	150.00			
Philadelphus Pyramidalis, 2 to 3 ft.	25.00	200.00			
Philadelphus Pyramidalis, 3 to 4 ft.	30.00	250.00			
Philadelphus Pyramidalis, 4 to 5 ft.	35.00				
Philadelphus Virginialis, 12 to 18 ins.	25.00	200.00			
Privet, Amur River North, 12 to 18 ins., 3 br. up	7.00	60.00			
Privet, Amur River North, 18 to 24 ins., 3 br. up	9.00	80.00			
Privet, Amur River North, 2 to 3 ft., 4 br. up	12.00	100.00			
Privet, California, 18 to 24 ins., 3 br. up	8.00	60.00			
Privet, California, 2 to 3 ft., 4 br. up	10.00	75.00			

## LINING-OUT SHADE TREES

Magnolia Soulangeana, 2 to 3 ft.	110.00	1000.00
Magnolia Soulangeana, 3 to 4 ft.	140.00	1250.00
Elm, Chinese, 2 to 3 ft., seedlings	4.50	40.00

## LINING-OUT SHRUBS

Almond, Pink-flowering, 1-yr., own-root	\$125.00	
Althaea, named varieties, from cuttings, 12 to 18 ins.	30.00	
Barberry, Thunbergi, 6 to 9 ins., 2-yr.	25.00	
Barberry, Thunbergi, 9 to 12 ins., 2-yr.	45.00	
Cornus Alba Sibirica, 6 to 12 ins.	45.00	
Cornus Amomum, 6 to 12 ins.	40.00	
Cornus Amomum, 12 to 18 ins.	50.00	
Cornus Florida, 12 to 18 ins.	50.00	
Cornus Florida, 18 to 24 ins.	60.00	
Cornus Peniculata, 6 to 9 ins., seedlings	40.00	
Cydonia Japonica, 2 to 3 ft., 2-yr. seedlings	80.00	
Forsythia Spectabilis, 18 to 24 ins.	45.00	
Hydrangea P. G., 1-yr., No. 1, rooted cuttings	60.00	
Lilac, Persian, 12 to 18 ins.	100.00	
Viburnum Opulus Sterile, 1-yr., rooted cuttings	60.00	
Weigela Eva Rathke, 6 to 12 ins.	100.00	
Weigela Eva Rathke, 18 to 24 ins.	150.00	

The above is only a partial list of stock available. For a complete assortment of other varieties and grades refer to our Spring Catalog.

Mail us your want list.

# ONARGA NURSERY CO.

PHONE 104

ONARGA, ILLINOIS

## BETTER SHRUBS

	Per 10	Per 100	Per 1000		Per 10	Per 100	Per 1000
Almond, Flowering, Pink				Honeysuckle, Wheeling			
2 to 3 ft.,				18 to 24 ins....	\$2.90	\$25.00	\$220.00
own root ...	\$5.50	\$50.00	\$450.00	Honeysuckle, Zabeli			
18 to 24 ins.,				18 to 24 ins....	3.50	30.00	250.00
own root ...	4.50	40.00	350.00	12 to 18 ins....	2.50	22.00	180.00
Berberis Mentorensis				Lilac, Rothomagensis			
18 to 24 ins....	6.00	52.50	....	18 to 24 ins....	3.50	30.00	....
Berberis Thunbergi				Philadelphus			
2 to 2 1/2 ft....	3.50	30.00	....	Coronarius			
18 to 24 ins....	2.90	25.00	220.00	3 to 4 ft....	4.50	40.00	....
12 to 15 ins....	1.90	16.00	....	2 to 3 ft....	4.00	35.00	....
Buddleia Charming				18 to 24 ins....	2.90	25.00	....
Medium ....	2.40	20.00	....	12 to 18 ins....	1.80	15.00	....
Buddleia Dubonnet				Philadelphus			
No. 1 ....	2.90	25.00	....	Virginalis			
Medium ....	2.40	20.00	....	2 to 3 ft....	5.50	50.00	....
Buddleia Floralart				18 to 24 ins....	4.50	40.00	....
No. 1 ....	2.90	25.00	....	Spiraea Billiardi			
Medium ....	2.40	20.00	....	18 to 24 ins....	2.90	25.00	200.00
Cornus Alba Sibirica				12 to 18 ins....	2.10	18.00	150.00
2 to 3 ft....	4.00	35.00	....	Spiraea Vanhouttei			
18 to 24 ins....	2.90	25.00	....	2 to 3 ft....	2.90	25.00	200.00
Deutzia Pride of				18 to 24 ins....	2.10	18.00	140.00
Rochester				12 to 18 ins....	1.40	12.00	100.00
2 to 3 ft....	3.50	30.00	....	Tamarix Africana			
18 to 24 ins....	2.50	22.00	....	3 to 4 ft....	4.50	40.00	350.00
Forsythia Intermedia				2 to 3 ft....	3.50	30.00	250.00
Spectabilis				18 to 24 ins....	2.50	20.00	180.00
2 to 3 ft....	4.00	35.00	300.00	12 to 18 ins....	1.90	16.00	120.00
18 to 24 ins....	2.90	25.00	200.00	Tamarix Hispida			
Honeysuckle,				3 to 4 ft....	4.50	40.00	350.00
Tatarica Rosea				2 to 3 ft....	3.50	30.00	250.00
2 to 3 ft....	4.00	35.00	300.00	18 to 24 ins....	2.50	20.00	180.00
18 to 24 ins....	2.90	25.00	220.00	12 to 18 ins....	1.90	16.00	120.00

## VINES

	Per 10	Per 100		Per 10	Per 100
Ampelopsis Engelmanni			Clematis Paniculata		
2-yr., No. 1 ....	\$2.40	\$20.00	2-yr., No. 1 ....	\$4.00	\$35.00
2-yr., Medium ....	1.90	16.00	2-yr., Medium ....	2.90	25.00
Celastrus Scandens			Lonicera Tellmanniana		
(American Bittersweet)			No. 1 ....	4.50	40.00
2-yr., No. 1 ....	2.90	25.00	Medium ....	3.50	30.00
2-yr., Medium ....	2.10	18.00			

## FLOWERING TREES

	Per 10	Per 100		Per 10	Per 100
Hopa Flowering Crab			Prunus Triloba		
4 to 5 ft....	\$ 6.50	\$ 60.00	4 to 5 ft....	\$10.00	\$ 90.00
3 to 4 ft....	5.50	50.00	3 to 4 ft....	8.00	70.00
2 to 3 ft....	4.50	40.00	2 to 3 ft....	7.00	60.00
Double Flowering Peach			Magnolia Soulangeana		
6 to 7 ft....	11.00	100.00	4 to 5 ft., B&B....	70.00	....
5 to 6 ft....	8.50	75.00	3 to 4 ft., B&B....	60.00	....
4 to 5 ft....	6.50	60.00	Redbud (Cercis Canadensis)		
3 to 4 ft....	5.50	50.00	4 to 5 ft....	9.50	90.00
2 to 3 ft....	4.00	35.00	Rose Acacia Standards		
Available in Pink and Red			5 to 6 ft....	20.00	175.00
Bleiana Purple-Leaf Plum			4 to 5 ft....	17.50	150.00
5 to 6 ft....	11.00	100.00	Thorn, Paul's Scarlet		
			3 to 4 ft....	16.50	150.00

We grow a complete assortment of stock for the wholesale trade.

Send for Price List.

## WILLIS NURSERY CO.

"Your Wholesale Nurserymen"

OTTAWA, KANSAS

normally we expect to be able to plant about half the time, but this winter we did scarcely any planting at all because it rained nearly every day, and the ground was unbelievably soggy and wet. We had little sunshine or drying winds.

The mild weather has made early flowering inevitable and later frost damage to fruit blossoms equally inevitable. Not only has the mild weather forced into bloom the usual jasmine and crocus, but by the end of February, I had seen in bloom Magnolia stellata, forsythia, Japanese flowering quince, flowering plum, red maple, filberts and boxwood, with buds on a great many other species about ready to open.

The open weather has brought not only the danger of severe damage from a spring frost, but the excess rains have had considerable effect on the color of evergreens; in fact, some look as bronze as they usually appear after a cold winter, and in nurseries where the drainage has not been adequate or where the water table is high, damage has resulted.

Roses in the field have made about one-half inch growth, and the cold, windy weather of early March damaged this growth.

What we really need is a normally cold winter, but I guess nurserymen are hard to please.

E. S. H.

## INDIANAPOLIS BANQUET.

More than 100 persons attended the annual banquet of the Indianapolis Landscape and Nursery Association February 23 at the Broad Ripple American Legion post.

H. J. Schnitzius, retiring president, summarized the work of the association during the past year. In addition to its regular activities, the group served as adviser to the Indianapolis park department; a committee was appointed which did much to revitalize the park system.

The new officers elected at a meeting February 9 were introduced by Mr. Schnitzius as follows: President, H. N. Engledow, Midwestern Tree Experts, Indianapolis; vice-president, E. C. Zaring, Sunnyview Gardens, Indianapolis; secretary, David Burkhardt, Burkhardt's Home Landscaping, Indianapolis, and treasurer, Edward Maschmeyer, Maschmeyer's Nursery, Indianapolis.

E. B. Palmer, master of ceremonies, presented a floor show.

MAX ENGLEADOW recently returned from Texas to Midwestern Tree Experts, Indianapolis, Ind., which are headed by his father, H. N. Engledow.

# BUNTINGS' NURSERIES, Inc.

Box 3 Selbyville, Del.

Place your order now for shipment when wanted. All stock listed here can be shipped promptly upon receipt of order. Liberally graded, true-to-name, best quality stock—offered at attractive prices. Our fruit trees are inspected annually by Dr. French and his associates from Massachusetts State College for trueness to name.

## APPLE TREES

	Each	Per 10	Per 100	Per 1000
1-in. and up, heavily br.....	\$1.05	\$9.00	\$80.00	\$750.00
¾ to 1-in., 6 to 7 ft.....	.90	7.50	65.00	600.00
11/16 to ¾-in., 5 to 6 ft.....	.70	5.50	45.00	400.00
9/16 to 11/16-in., 4 to 5 ft.....	.65	5.00	40.00	350.00
7/16 to 9/16-in., 3 to 4 ft.....	.50	3.80	28.00	250.00
5/16 to 7/16-in., 2 to 3 ft.....	.45	3.20	22.00	200.00

Anoka, Baldwin, Solid Red Delicious, Red Gravenstein, Grimes Golden, Hyslop Crab, Dbl. Red Jonathan, Lodi, Dbl. Red McIntosh, Red Siberian Crab, Red Spy, Red Rome Beauty, R. I. Greening, Smokehouse, Dbl. Red Stayman, Sweet Paradise, Transcendent Crab, Williams Early Red, Winter Banana, Yellow Delicious, Yellow Transparent, York Imperial.

## PEACH TREES

	Each	Per 10	Per 100	Per 1000
1-in. and up, heavily br.....	\$1.05	\$9.00	\$80.00	\$750.00
¾ to 1-in., 6 to 7 ft.....	.90	7.50	65.00	600.00
11/16 to ¾-in., 5 to 6 ft.....	.75	6.00	50.00	450.00
9/16 to 11/16-in., 4 to 5 ft.....	.65	5.00	40.00	350.00
7/16 to 9/16-in., 3 to 4 ft.....	.55	4.00	30.00	250.00
5/16 to 7/16-in., 2 to 3 ft.....	.45	3.00	20.00	150.00
¼ to 5/16-in., 2 to 3 ft.....	.40	2.50	15.00	125.00

Amber Gem, Belle of Georgia, Brackett, Carman, Early Crawford, Crawford, Elberta, Gage Elberta, Golden-east, Golden Jubilee, Greensboro, Halehaven, Heath Cling, J. H. Hale, O'Boy, Redhaven, Rochester, Shipper's Late Red, Sunhigh, Summercrest, Triogem, Vaillant, Vedette, White Hale.

## PEAR TREES

	Each	Per 10	Per 100	Per 1000
11/16 to ¾-in., 5 to 6 ft.....	\$1.10	\$9.50	\$85.00	
9/16 to 11/16-in., 4 to 5 ft.....	.95	8.00	65.00	
7/16 to 9/16-in., 3 to 4 ft.....	.85	7.00	55.00	

Bartlett, Cayuga, Clapp Favorite, Duchess, Kieffer, Seckel.

## PLUM TREES

	Each	Per 10	Per 100	Per 1000
11/16 to ¾-in., 5 to 6 ft.....	\$1.10	\$9.50	\$85.00	
9/16 to 11/16-in., 4 to 5 ft.....	.95	8.00	70.00	
7/16 to 9/16-in., 3 to 4 ft.....	.80	6.50	55.00	

Abundance, Burbank, Fellenberg, Stanley Prune, Shropshire Damson, Red June.

## SWEET CHERRY TREES

	Each	Per 10	Per 100	Per 1000
11/16 to ¾-in., 5 to 6 ft.....	\$1.40	\$12.50	\$115.00	
9/16 to 11/16-in., 4 to 5 ft.....	1.15	10.00	90.00	
7/16 to 9/16-in., 3 to 4 ft.....	1.00	8.50	75.00	
5/16 to 7/16-in., 2 to 3 ft.....	.90	7.50	65.00	

Black Tartarian, Governor Wood, Lambert, Napoleon, Schmidt's Bigarreau, Yellow Spanish.

## SOUR CHERRY TREES

	Each	Per 10	Per 100	Per 1000
11/16 to ¾-in. cal.....	\$1.25	\$11.00	\$95.00	
9/16 to 11/16-in. cal.....	1.15	10.00	85.00	
7/16 to 9/16-in. cal.....	1.00	8.50	70.00	
5/16 to 7/16-in. cal.....	.90	7.50	60.00	

Montmorency, May Duke, Early Richmond, English Morello.

## ASPARAGUS ROOTS

Our Asparagus Roots have made a very good growth this season. We are the largest growers of Asparagus in the country. Write for special prices on large numbers.

	Per 25	Per 100	Per 250	Per 1000
3-yr., heavy No. 1 grade.....	\$1.00	\$3.50	\$7.50	\$25.00
2-yr., heavy No. 1 grade.....	.75	2.50	4.75	15.00
1-yr., heavy No. 1 grade.....	.60	2.00	3.50	9.00

Varieties: Mary Washington, Paradise.

## RHUBARB ROOTS

	Per 25	Per 100	Per 250	Per 1000
1½ to 2-in. cal.....	\$2.00	\$6.50	\$15.00	\$55.00
1 to 1½-in. cal.....	1.50	4.50	10.00	35.00
¾ to 1-in. cal.....	1.25	3.50	7.50	25.00
½ to ¾-in. cal.....	1.00	2.50	5.00	16.00

Varieties: Victoria, Myatt's Linnaeus.

## STRAWBERRY PLANTS

	Per 25	Per 100	Per 250	Per 1000
STANDARD VARIETIES:				
Big Joe, Blakemore, Dunlap,				
Robinson Temple.....	\$0.40	\$1.25	\$2.25	\$ 7.50
Ambrosia Late, Chesapeake,				
Dorsett, Fairfax, Gandy,				
Premier, Sparkle.....	.45	1.35	2.50	8.50
Fairland.....	.50	1.50	3.00	10.00
EVERBEARING VARIETIES:				
Gem, Gemanta, Mastodon.....	.75	2.50	5.50	18.00
Streamliner.....	1.00	2.75	6.25	22.50
Superfection.....	1.25	4.00	9.50	35.00

## CANNAS

Carefully grown under our personal supervision, our Cannas are true-to-name, liberally graded, strong 2 to 5-eye divisions, and will please the most exacting type of customer.

	Per 100	Per 1000
ALLEMANIA. Tall. Flowers bright scarlet with yellow border, green foliage.....	\$5.50	\$50.00
AMBASSADOR. Tall. Red flowers, bronze foliage.....	5.50	50.00
FIREBIRD. Medium. Red flowers, green foliage.....	5.00	45.00
GOLDEN GATE. Tall. Flowers open almost pure gold, but soon become richly rayed with orange-crimson.....	5.50	50.00
HUNGARIA. Tall. Pink flowers, green foliage.....	5.50	50.00
KING HUMBERT. Tall. Scarlet flowers, bronze foliage.....	6.50	60.00
LOUIS CAYEUX. Medium. A giant-flowered bright rosy-scarlet, green foliage.....	5.50	50.00
MADAM CROZY. Dwarf. Flowers red with yellow edge, green foliage.....	5.50	50.00
PRESIDENT. Tall. Red flowers, green foliage.....	6.50	60.00
RICHARD WALLACE. Medium. Canary-yellow flowers, green foliage.....	5.00	45.00
WINTER'S COLOSSAL. Medium. Red flowers, green foliage.....	5.50	50.00
YELLOW KING HUMBERT. Medium. Yellow flowers, green foliage.....	5.50	50.00

## HEDGE PLANTS

Our soil and climatic conditions are ideal for the production of good hedge plants. We guarantee our stock to be as well grown and developed in grade as any in this country. Write for special prices on large numbers.

### CALIFORNIA PRIVET (Ligustrum Ovalifolium)

	Per 10	Per 100	Per 1000
Special Grafting Grade.....	\$0.50	\$ 3.00	\$ 20.00
6 to 12 ins., 2 canes or more.....	.65	5.00	40.00
12 to 18 ins., 2 canes or more.....	.75	6.00	50.00
18 to 24 ins., 2 canes or more.....	.85	7.00	60.00
2 to 3 ft., 4 canes or more.....	1.00	8.50	75.00
3 to 4 ft., 6 canes or more.....	1.50	12.50	110.00
4 to 5 ft., 6 canes or more.....	2.25	17.50	150.00

### AMUR RIVER NORTH PRIVET

	Per 10	Per 100	Per 1000
1½ to 2 ft., 3 canes or more.....	1.00	8.50	75.00
2 to 3 ft., 4 canes or more.....	1.40	12.00	105.00
3 to 4 ft., 6 canes or more.....	1.50	16.00	145.00

### BERBERIS THUNBERGI

	Per 10	Per 100	Per 1000
(Green-leaved Barberry)			
3-yr., 9 to 12 ins., trans.....	1.60	12.00	110.00
3-yr., 12 to 15 ins., trans.....	2.00	16.00	150.00
3-yr., 15 to 18 ins., trans.....	2.50	20.00	190.00
3-yr., 1½ to 2 ft., trans.....	3.00	25.00	240.00
3-yr., 2 to 2½ ft., trans.....	4.00	37.50	340.00
2-yr., 9 to 12 ins., br. sdigs.....	.75	5.00	30.00
2-yr., 12 to 18 ins., br. sdigs.....	1.00	7.00	50.00
2-yr., 18 to 24 ins., br. sdigs.....	1.25	10.00	75.00

### BERBERIS THUNBERGI ATROPURPUREA

	Per 10	Per 100	Per 1000
(Red-leaved Barberry)			
3-yr., 9 to 12 ins., trans.....	2.50	20.00	175.00
3-yr., 12 to 15 ins., trans.....	3.00	25.00	200.00
3-yr., 15 to 18 ins., trans.....	3.50	30.00	260.00
3-yr., 1½ to 2 ft., trans.....	4.00	35.00	300.00
3-yr., 2 to 2½ ft., trans.....	5.00	45.00	400.00
2-yr., 9 to 12 ins., br. sdigs.....	1.00	8.00	65.00
2-yr., 12 to 18 ins., br. sdigs.....	1.50	12.50	110.00
2-yr., 18 to 24 ins., br. sdigs.....	2.50	20.00	175.00

FREE PACKING FOR CASH WITH ORDER. Our Wholesale List offers a complete line of nursery stock available for the trade. If you have not received a copy, write us today. When requesting wholesale rates, kindly use your printed stationery. If interested in large lots, please submit a list of your anticipated requirements for special consideration.



## WANT LIST

We are in need of the following list of stock. Please quote your best prices and specify quantities on all items you can furnish.

- 300 Goldenrod Plum, 11/16-in.  
 100 Cherry, Dbl. Flg., 3 to 4 ft.  
 150 Crab, Bechtel's, 3 to 4 ft.  
 500 Mountain Ash, 5 to 6 ft. and 6 to 8 ft.  
 200 Pin Oak, 6 to 8 ft.  
 150 Plane Tree Oriental, 8 to 10 ft.  
 100 Poplar, Bolleana, 6 to 8 ft.  
 2000 Abelia Grandiflora, 18 to 24 ins.  
 1500 Almond, Dbl., Pink, 2 to 3 ft.  
 1500 Cydonia Japonica, 18 to 24 ins. and 2 to 3 ft.  
 500 Deutzia Gracilis, 12 to 18 ins.  
 400 Deutzia Gracilis Rosea, 15 to 18 ins.  
 1000 Euonymus Alatus, 18 to 24 ins.  
 2500 Euonymus Alatus Compactus, 15 to 18 ins.  
 1500 Euonymus Patens, 15 to 18 ins. and 18 to 24 ins.  
 1000 Golden Ninebark, 2 to 3 ft.  
 2000 Golden Iboia Privet, 15 to 18 ins. and 18 to 24 ins.  
 400 Hydrangea P. G., Tree 3 to 4 ft.  
 2000 Kerria Japonica Floraplana, 18 to 24 ins. and 2 to 3 ft.  
 1000 Kolkwitzia Amabilis, 18 to 24 ins.  
 2000 Ligustrum Lucidum Compactum, 18 to 24 ins.  
 2000 Ligustrum Japonicum, 2 to 3 ft.  
 1000 Lilac, Red, single and double, 18 to 24 ins. and 2 to 3 ft.  
 5000 Privet, Regel, 18 to 24 ins.  
 500 Rhodotypos Kerrioides, 18 to 24 ins.  
 2000 Rose Acacia, 2 to 3 ft.  
 3000 Spiraea Anthony Waterer, 12 to 18 ins.  
 100 Viburnum Opulus Nana, 10 to 12 ins.  
 500 Viburnum Tomentosum, 2 to 3 ft.  
 500 Viburnum Tomentosum Plicatum, 18 to 24 ins. and 2 to 3 ft.  
 1000 Vitex Macrophylla, 18 to 24 ins.  
 2500 Weigela, Variegated, 18 to 24 ins.  
 1000 Clematis Jackmani, 3-in. pots  
 1000 Euonymus Radicans, 2-yr., No. 1  
 1000 Euonymus Coloratus, 2-yr., No. 1

### ROSES, NO. 1

- 2000 Cinnabar  
 2000 Floradora  
 2000 Dagmar Spaeth  
 4000 Gruss an Aachen  
 2000 Mrs. R. M. Finch  
 1500 Rose Elfe  
 2000 Red Lafayette  
 1000 Ideal  
 2000 Triomphe d'Orleanais  
 5000 Golden Salmon  
 1000 Gloria Mundi

**C. W. STUART & CO.**  
 NEWARK, N. Y.

### RHODOS, LAUREL, AZALEAS

Clean, Bushy, Native Plants of Exceptional Quality  
 Price each per 10, 5 per cent off on lots of 50 or more.

	Rhododendron maximum	Rhododendron catawbiense	Kalmia latifolia	Azalea calendulacea and nudiflorum
18 to 24 ins.	\$2.25	\$2.75	\$1.80	\$1.75
2 to 2½ ft.	2.85	3.25	2.35	2.20
2½ to 3 ft.	3.40	3.90	2.90	2.65
3 to 3½ ft.	4.00	5.15	3.50	3.15

Nice solid soil ball, well burlapped.  
 All budded except Rhodo, max. Shipping or Delivery at cost.

**VARADY'S NURSERIES**

Ph. Churchville 837

Treose, Pa.

## Coming Events

### MEETING CALENDAR.

May 10 and 11, California nurserymen's refresher course, California Polytechnic school, San Luis Obispo.

May 19 to 21, Louisiana Horticultural Association, Roosevelt hotel, New Orleans.

May 22 to 24, Florida Association of Nurserymen, George Washington hotel, Jacksonville.

May 25 to 28, Western Shade Tree Conference, Hotel Senator, Sacramento, Calif.

June 10 and 11, Alabama State Nurserymen's and Florists' Association, Whitney hotel, Montgomery.

June 19 and 20, Mississippi Florists' and Nurserymen's Association, Hotel Buena Vista, Biloxi.

July 17 to 21, American Association of Nurserymen, Fairmont hotel, San Francisco, Calif.

August 8 and 9, National Mail Order Nurserymen's Association, Hotel La Salle, Chicago, Ill.

August 11 and 12, Indiana Association of Nurserymen, Morton Arboretum, Lisle, Ill.

August 18 and 19, West Virginia Nurserymen's Association, Tygart hotel, Elkins.

August 22 to 24, Texas Association of Nurserymen, Driskill hotel, Austin.

### PLAN FLORIDA MEETING.

The program for the annual convention of the Florida Association of Nurserymen, to be held May 22 to 24 at the George Washington hotel, Jacksonville, in conjunction with the convention of the Florida State Florists' Association, was outlined at a preliminary meeting March 1. Walter Adair, Adair's House of Flowers, Jacksonville, general convention chairman, will appoint local committees soon, according to C. Leslie Whip, Callahan, secretary.

### MISSISSIPPI DATES.

The annual convention of the Mississippi Florists' and Nurserymen's Association will be held June 19 and 20 at the Hotel Buena Vista, Biloxi. Vice-president William J. Broome, Jr., Broome's Flowers, Natchez, claims that the meeting will be the largest in the history of the organization because of its location and the increase in membership.

William Adams, Jr., Loraine's Flower Shop, Gulfport, convention chairman, is in charge of the allotment of space for booth displays in the newly constructed convention hall of the hotel.

### WEST VIRGINIA PLANS.

Fishing, swimming and picnicking are among the recreational activities planned for the outdoor summer meeting of the West Virginia Nurs-



# NORTHERN GROWN PLANTS

FRUIT TREES • SMALL FRUITS • SHRUBS • ROSES • ORNAMENTALS

## RED RASPBERRIES

	Per 100	Per 1000
Chief		
1/4-in. cal. and up.	\$6.50	\$55.00
No. 1, 3/16-in.	5.50	45.00
Indian Summer		
Transplants	8.00	70.00
1/4-in. cal. and up.	7.50	65.00
No. 1, 3/16-in.	6.50	55.00
*Latham, transplants	7.50	
*Newburgh, 1/4-in. cal. and up.	7.00	
Sunrise, No. 1, 3/16-in. cal.	5.50	45.00
*Latham and Newburgh sold in lots of 100 only.		

## BLACK RASPBERRIES

	Per 100	Per 1000
Cumberland, No. 1 tips.	\$4.50	\$35.00
Logan, No. 1 tips.	4.50	35.00

## BLACKBERRIES—BOYSENBERRIES—YOUNGBERRIES

	Per 100	Per 1000
Eldorado, No. 1, R. C.	\$ 5.00	\$ 40.00
Boysenberries, Thornless Transplants.	13.50	125.00
Boysenberries, Thornless Tips.	5.50	45.00
Youngberries, Thornless Transplants.	13.50	125.00
Youngberries, Thornless Tips.	5.50	45.00

## GOOSEBERRIES

	Per 100
Carrie, 1-yr., No. 1	\$20.00
Downing, 1-yr., No. 1	20.00
Pixwell	SOLD OUT FOR 1949

## GRAPES

	Per 10	Per 100	Per 1000
Bluebell			
2-yr., No. 1	\$3.00	\$22.00	
1-yr., No. 1	2.50	18.00	
Blue Jay			
2-yr., No. 1	3.00	22.00	
1-yr., No. 1	2.50	18.00	
Concord, 1-yr., No. 1	1.20	10.00	\$ 80.00
Delaware			
2-yr., No. 1	1.40	13.00	120.00
1-yr., No. 1	1.30	11.00	90.00
Fredonia, 1-yr., No. 1	1.00	8.00	70.00
Moonbeam, 1-yr., No. 1	2.50	18.00	
Niagara, 1-yr., No. 1	1.00	8.00	70.00
Portland, 1-yr., No. 1	1.30	11.00	100.00

## CURRENTS

	Per 100	Per 1000
Red Lake		
3-yr., No. 1	\$18.00	\$160.00
2-yr., No. 1	16.00	140.00
1-yr., No. 1	12.00	100.00

## RHUBARB

	Per 10	Per 100
Canada Red		
No. 1	\$3.25	\$30.00
Medium	2.75	25.00
MacDonald		
No. 1	2.75	25.00
Medium	2.25	20.00
Ruby Red		
No. 1	2.75	25.00
Medium	2.25	20.00
Valentine		
No. 1	5.25	50.00
Medium	4.75	45.00

## HANSEN'S BUSH CHERRIES

	Per 10	Per 100	Per 1000
2 to 3 ft., transplants.	\$2.50	\$20.00	\$150.00
18 to 24 ins., transplants.	2.25	17.50	125.00
12 to 18 ins., transplants.		8.00	75.00
2 to 3 ft., seedlings.		8.00	75.00
18 to 24 ins., seedlings.		7.50	70.00
12 to 18 ins., seedlings.		5.50	50.00

## VINES

Clematis, heavy plants, shipped staked with 18-in. top from 3-in. pots, 50c each.

Henry, white.

Jackmani, purple.

Lord Neville, plum-purple.

Veillard, rose.

**Write for special quotations on larger quantities than those listed on this page.**

We are in a position to quote attractive prices on the following:

Northern-grown Apple, Plum and Cherry

Shrubs, Roses, Deciduous Trees and

Deciduous Tree Seedlings.

Northern-grown Apple Seedlings

Northern-grown Plum Seedlings



**Andrews**

**NURSERY**  
COMPANY

FARIBAULT

MINNESOTA

# KELLY BROTHERS NURSERIES, Inc.

Phone: 764

Dansville, N. Y.

We offer a complete assortment of Fruit Trees.

All Trees graded—ready for immediate shipment.

Send us your Want List for Special Low Quotations.

## SOUR CHERRY

1 and 2-yr.

12 to 18 ins.  
18 to 24 ins.  
24 to 30 ins., 5/16-in.  
2 to 3 ft., 7/16-in.  
3 to 4 ft., 9/16-in.  
4 to 5 ft., 11/16-in. and up.

Varieties:

Montmorency, English Morello, Early Richmond.

## PEARS

2-yr. branched.

12 to 18 ins.  
18 to 24 ins., 3/16-in.  
2 to 3 ft., 5/16-in.  
3 to 4 ft., 7/16-in.  
4 to 5 ft., 9/16-in.  
5 to 6 ft., 11/16-in. and up.

Varieties:

Bartlett, Cayuga, Clapp Favorite, Beurre d'Anjou, Duchesse, Flemish Beauty, Kieffer, Seckel, Sheldon, Waite, Willard.

## SWEET CHERRY

1 and 2-yr., whips and branched.

12 to 18 ins.  
18 to 24 ins.  
2 to 3 ft.  
3 to 4 ft.  
4 to 5 ft.  
5 to 6 ft.

Varieties:

Black Giant, Black Tartarian, Gov. Wood, Napoleon, Schmidt's Bigarreau, Windsor.

## PEACH

1-yr., 5/16-in.  
1-yr., 7/16-in.  
1-yr., 9/16-in. and up.

Assortment of leading varieties.

## PLUMS

1 or 2-yr.

12 to 18 ins.  
18 to 24 ins., 3/16-in.  
2 to 3 ft., 5/16-in.  
3 to 4 ft., 7/16-in.  
4 to 5 ft., 9/16-in.  
5 to 6 ft., 11/16-in. and up.

Varieties:

Abundance, Burbank, Bradshaw, Formosa, Fellenberg, Stanley, Shiro, Shropshire Damson, Santa Rosa, Yellow Egg.

## QUINCE

1 and 2-yr.

2 to 3 ft.  
3 to 4 ft.

Varieties:

Orange.

## APPLE

2-yr. branched.

3 ft., 5/16-in.  
3 to 4 ft., 7/16-in.  
4 to 5 ft., 9/16-in.  
5 to 6 ft., 11/16-in. and up.

Varieties:

Baldwin, Cortland, Dolgo Crab, Delicious, Double Red Delicious, Early McIntosh, Hyslop Crab, Macoun, McIntosh, Lodi, Red Rome Beauty, Red Gravenstein, Red Spy, Stayman Winesap, Yellow Delicious, Yellow Transparent.

## NUT TREES

Black Walnut and Butternut.

Transplants:

2 to 3 ft.  
3 to 4 ft.  
4 to 5 ft.

# KELLY BROTHERS NURSERIES, Inc.

**ROSES—No. 1, \$4.50 per 10; \$40.00 per 100, in the following varieties:**

### HYBRID TEAS

Ami Quinard  
Betty Uprichard  
Caledonia  
Condessa de Santiago  
Dame Edith Helen  
Edith Nellie Perkins  
Etoile de Hollande  
Editor McFarland

E. G. Hill  
Joanna Hill  
K. A. Viktoria  
Luxembourg  
Lady Hillingdon  
Margaret McGredy  
McGredy's Scarlet  
Mrs. Chas. Bell

Mrs. P. S. du Pont  
Pres. H. Hoover  
Pink Radiance  
Red Radiance  
Roslyn  
Sunburst  
Sœur Therese  
Talisman

**HYBRID PERPETUALS:** American Beauty, Frau Karl Druschki.

**CLIMBERS:** American Beauty, Dr. Van Fleet, Silver Moon, Talisman Climber.

**POLYANTHAS:** Edith Cavell, Golden Salmon, Ideal, Katharina Zelmet, Orleans.

Write for quotations on 1000 lots.

**WAYNESBORO NURSERIES, Waynesboro, Virginia**

erymen's Association August 18 and 19. The actual meeting will be held the first day at the Tygart hotel, Elkins, and a brief session may be held the next morning.

Members and guests will attend a picnic in a park on the Cheat river on the first day and will tour the spruce forests along the upper reaches of this river on the afternoon of the second day, stopping for lunch in the forest.

## OKLAHOMA CITY ELECTS.

New officers of the Oklahoma City Retail Nurserymen's Association elected at the February meeting include Bruce Rey, Rey's Nursery, Oklahoma City, president; Thomas E. Roberts, Carter Floral & Nursery, Oklahoma City, vice-president, and Wayne Heavin, Oklahoma City, secretary-treasurer.

At the association's March meeting Clyde Bower, state entomologist, spoke on the control of plant diseases, and a panel discussion followed. Highlights of his recent trip to Europe were told by William Nissen, chairman of the better gardens committee of the Oklahoma City chamber of commerce.

The next meeting of the association is scheduled for April 11.

B. Prim.

## NEW PLANT PATENTS.

The following plant patents were issued recently, according to Rummel, Rummel & Snow, Chicago patent lawyers:

No. 823. Rose plant. Eugene S. Boerner, Newark, N. Y., assignor to Jackson & Perkins Co., Newark. A new and distinct variety of rose plant, characterized as to novelty by the color and high center form of the flowers; the reflex development and veining of the petals; vigorous, hardy and extremely free-blooming habits of the plant, and the red coloring of the undersurface of the foliage.

No. 824. Rose plant. Eugene S. Boerner, Newark, N. Y., assignor to Jackson & Perkins Co., Newark. A new and distinct variety of rose plant, characterized as to novelty by the sturdy and vigorous growing habit, with upright branches and heavy foliage; by the distinctive coloring of its flowers resistant to sunburn and their long-lasting quality, and by the characteristic green veining of the petals both in bud and open flower.

No. 825. Chrysanthemum plant. Gustav C. Sparre, Clarkson, Ont., Canada, assignor to John J. Grullemans, Mentor, O. A new variety of chrysanthemum plant, characterized in that its flowers are fully double, are shaped like the flowers of a cactus dahlia, are large yet graceful in appearance and of an exceptional whiteness and are produced in open clusters. The plant is exceedingly vigorous, has the ability to withstand severe winters, whether protected or unprotected, is exceptionally resistant to disease and has good resistance to drought.

No. 826. Chrysanthemum plant. Gustav C. Sparre, Clarkson, Ont., Canada, assignor to John J. Grullemans, Mentor, O. A new variety of chrysanthemum plant, characterized in that its flowers are produced in open clusters, are fully double, are shaped like a cactus dahlia and are large yet graceful in appearance and have an exceptional color, beginning with a deep yellow-ochre at the start of the blooming season and changing during the blooming season to an apricot-buff and then to a soft corn-yellow. The plant is exceedingly vigorous, of exceptional resistance to disease and of good resistance to drought, and its roots have the ability to withstand severe winters, both protected and unprotected.



# The

# "PLANTING URGE"

## PAYS YOU MORE *with*

# CLOVERSET POTS



## NOW! 2 WEIGHTS

### Standard HEAVY — Special LIGHT

Where you plan for a long season extending into the fall, we recommend the Standard Heavy Pot. Larger plants require the heavier pots. They will prevent losses in the event there should be a small carry-over to the next season.

For short-season selling the Special Light Pot will do a good job. Made only in the three smaller sizes for smaller plants. Costs you less than any comparable pot.

Since potting needs to be done early for greatest success, use Special Light Pots for stock that is to be sold first and Standard Heavy Pots for stock that will be sold last.

### SEND ONLY 25c FOR SAMPLES

OF NO. 0, 1, 2, 3,

WE PAY THE POSTAGE.

Correct Size for  
Every Purpose



No. 0

For perennials  
and greenhouse.



No. 1

For perennials  
and MUMS.



No. 2

For roses  
and shrubs.



No. 3

For large shrubs  
and transplanting.

## PRICES - SPECIFICATIONS

Standard HEAVY	No. 0	No. 1	No. 2	No. 3	No. 4
Height	5 1/2 ins.	6 1/2 ins.	9 1/2 ins.	9 ins.	Height . . . 13 ins.
Diam. Top	5 ins.	6 ins.	7 ins.	8 ins.	Diam., top 12 ins.
Bottom Diam.	4 1/2 ins.	5 1/2 ins.	6 1/2 ins.	7 1/2 ins.	Diam., bot. 11 ins.
Corresponding Clay Pot	6-in.	7-in.	8-in.	9-in.	Approx. Wt., per 100 200 lbs.
Approx. Weight per 100	35 lbs.	52 lbs.	78 lbs.	88 lbs.	25 pots. \$ 6.25
Per 100	\$3.00	\$4.25	\$4.75	\$5.25	50 pots. 12.50
Per 1000	\$27.50	\$40.00	\$45.00	\$50.00	75 pots. 18.75
					100 pots. 22.50
					1000 pots. 200.00

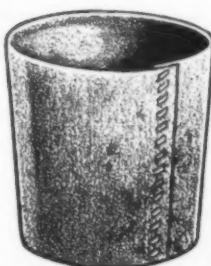
300 pots or more, one size or asst. sizes take the 1000 price.

Special LIGHT	No. 0	No. 1	No. 2	
Per 200	\$5.00	\$7.00	\$8.00	Send 25¢ for set of samples. We pay postage.
Per 1000	\$22.50	\$32.50	\$37.50	Freight rates are based on min. of 100 lbs. Less than 100 lbs. take 100-lb. rate.
Approx. Wt. per 200	25 lbs.	37 lbs.	50 lbs.	
Approx. Wt. per 1000	125 lbs.	185 lbs.	250 lbs.	
Packed 200 per carton. Please order in multiples of 200.				

Nature gives folks the "Planting Urge" after the dormant planting season is over. Warm, sunny spring days make them want to plant something, but dormant stock doesn't do well then. Nature sometimes works against us with a short season . . . BUT NOT IF YOU USE CLOVERSET POTS.

When you use Cloverset Pots to start and grow plants, you'll have them ready for bigger profit selling at the very time nature gives folks the "Planting Urge." You no longer need to depend on nature for a good dormant season. You can make your own season and extend it right on through summer or as long as you have Cloverset Potted Plants. Plants in foliage or bloom and which can easily be replanted without loss will sell fast at far greater profits to you.

It's so much easier to work with nature by letting the "Planting Urge" and Cloverset Pots INCREASE YOUR PROFITS on roses, shrubs, perennials, vines, fruit trees and other stock. This year . . . BE READY. ORDER Cloverset Pots NOW.



### New No. 4 Pot

This larger pot is ideal for large shrubs, fruit trees and evergreens. Send 25¢ for sample to be sent postpaid. Packed 25 per carton.

### DON'T DELAY ORDER POTS NOW!

L.C.L. shipments are pooled  
when possible to save on freight.

### Write for This FREE GUIDE BOOK

Gives you pictures and complete story on how to use Cloverset Pots.



Practical Nurserymen for 26 years.

# CLOVERSET FLOWER FARM

ERNEST HAYSLE & SON

105th Street and Broadway, Kansas City 5, Mo.

## PENNSYLVANIA SEEDLINGS and TRANSPLANTS

grown at High Altitude, in the heart of the  
ORIGINAL PENNSYLVANIA PINE FORESTS

	Per 100	Per 1000
American Red Pine, 2-yr., 2 to 5 ins. ....	\$4.00	\$30.00
Scotch Pine (Sylv.), 2-yr., 2 to 3 ins. ....	2.00	18.00
Scotch Pine (Sylv.), 2-yr., 3 to 6 ins. ....	3.00	25.00
Norway Spruce, 2-yr., 2 to 5 ins. ....	3.00	25.00
Douglas Fir, 2-yr., 3 to 7 ins. ....	3.00	25.00
Mugho Pine, 2-yr., spreading. ....	2.50	20.00

Send for list of transplants.

### EXCELLENT ROOT SYSTEMS, STURDY PLANTS.

500 at 1000 rate. No charge for packing or boxing when cash accompanies order; otherwise, one-half cash with order, balance C.O.D.

### SCHROTH'S NURSERY

Nursery: Pine Flats, Pa.

INDIANA, PA.

### GUARANTEED

#### LINING-OUT STOCK — SPRING, 1949 Per 1000

White Spruce, 3-yr. transplants (2-1), 2 to 5 ins. ....	\$40.00
Banks Pine, 3-yr. transplants (2-1), 4 to 8 ins. ....	25.00
Mugho Pine, 3-yr. seedlings (3-0), 2 to 5 ins. ....	20.00
Mugho Pine, 3-yr. transplants (2-1), 2 to 4 ins. ....	35.00
Black Hill Spruce, 4-yr. transplants (2-2), 3 to 6 ins. ....	50.00

Terms: Cash with order, or 50 per cent with order and the balance C.O.D.  
250 of one kind and size may be purchased at the 1000 rate.

### OUR GUARANTEE

Ninety per cent of all trees (except seedlings) sold at regular wholesale prices, as quoted in this list, are guaranteed to live. Replacements will be made free of charge for any losses in excess of 10 per cent of the number purchased, provided we are notified of such losses by October 1, 1949.

Several other varieties available. Send for complete list of stock.

WESTERN MAINE FOREST NURSERY CO., Dept. AN-49 Fryeburg, Maine

# J & P

EVERGREENS  
SHADE TREES

SHRUBS, VINES  
HEDGE PLANTS, etc.

In good assortment.

**Jackson & Perkins Co.**  
NEWARK, NEW YORK STATE

## Quarantines

### TO EXTEND QUARANTINE ON BERBERIS AND MAHONIA.

The protection now afforded by small grain crops in many states by the black stem rust quarantine will be extended, effective May 1, to the entire United States.

Black stem rust is a fungus disease which is highly destructive to small grains. Certain species of barberry, mahonia and mahoberberis are alternate hosts of this fungus, and their presence in grain-growing areas is a constant menace to the grain crop.

All interstate movement within the continental United States of barberry, mahonia and mahoberberis plants not known to be resistant to the black stem rust is prohibited by the revised quarantine, and permits will be required for all interstate movement of plants of the species known to be rust-resistant.

The quarantine designates as eradication states those in which barberry, mahonia and mahoberberis plants susceptible to black stem rust are being destroyed. These nineteen states are Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, Virginia, Washington, West Virginia, Wisconsin and Wyoming. Seeds and fruits of all barberry, mahonia and mahoberberis plants are prohibited from moving into these states from the other twenty-nine states and the District of Columbia. However, seeds and fruits of rust-resistant barberry, mahonia and mahoberberis plants produced in areas free from rust-susceptible plants within the eradication states will be allowed to move, under permit, from and between these states.

### EXTEND WHITE-FRINGED BEETLE QUARANTINE.

Moderate extensions of the area regulated because of the white-fringed beetle became effective March 17 and included the newly discovered infested area in Tennessee, as well as parts of additional counties in the previously quarantined states of Alabama, Florida, Georgia, Louisiana, Mississippi and North Carolina.

The entire city of Memphis, Tenn., is included because a well established infestation of white-fringed beetles was discovered there in 1948. The Memphis infestation was placed under state quarantine soon after it was found, and a cooperative federal

## "Get to Know LEGHORN'S for Your Quality Evergreens"

With Spring just around the corner, now is the time to place your orders for lining-out stock. We have some exceptionally fine stock in the items listed below. Order now and look forward confidently to Spring with liners from LEGHORN'S.

<b>Taxus Cuspidata</b>	Per 100	Per 1000	<b>Taxus Hatfieldi</b>	Per 100	Per 1000
2-yr., T. ....	\$30.00	\$250.00	2-yr., T. ....	\$ 30.00	\$250.00
3-yr., T, heavy, cutback, beautiful plants .....	35.00	300.00	<b>Taxus Capitata,</b> cutting type from leaders.		
<b>Taxus Cuspidata Nana</b>			2-yr., T. ....	30.00	250.00
2-yr., T. ....	30.00	250.00	5-yr., TT., 15 to 18 ins. ....	90.00	850.00
4-yr., TT. ....	50.00	450.00	12 to 15 ins., seedling type	150.00	....
5-yr., TT. ....	65.00	600.00	<b>Taxus Columnaris Mooni</b>		
<b>Taxus Intermedia</b>			2-yr., T. ....	30.00	250.00
2-yr., T. ....	30.00	250.00	<b>Thuja Pyramidalis</b>		
5-yr., TT. ....	50.00	450.00	2-yr., T. ....	30.00	250.00
7-yr., TTT, 10 to 12 ins. ....	75.00	700.00	<b>Thuja Boothi</b>		
<b>Taxus Hicksi</b>			2-yr., T. ....	30.00	250.00
2-yr., T. ....	30.00	250.00			
4-yr., TT. ....	50.00	450.00			
6-yr., TTT. ....	90.00	850.00			

We cannot accept orders for less than 100 of a size and variety. 250 plants furnished at the 1000 rate. Write in for prices on our B&B evergreens, also, as we believe we are growing some of the finest evergreens to be found.

**LEGHORN'S EVERGREEN NURSERIES**

Geer St.  
CROMWELL, CONN.

and state control program is now in progress.

Additional counties, parts of which are placed under regulation, are: Alabama, Clarke; Florida, Jackson; Georgia, Crawford and Telfair; Louisiana, East Baton Rouge and Washington; Mississippi, George, and North Carolina, Duplin and Jones.

### ALLOW IMPORT OF LARGER SLOW-GROWING PLANTS.

Under an amendment, effective April 15, to the size-age limitations contained in the federal nursery stock, plant and seed quarantine, slightly larger trees and shrubs of slow-growth habit may be imported when they are otherwise enterable under the quarantine provisions, the United States Department of Agriculture announced recently.

These plants are now being admitted when no more than 2 years of age if they are grown from seeds, cuttings or layers, or have no more than two years' growth after budding or grafting. The new regulation retains the 2-year maximum for the normal-growing types of trees and shrubs grown from seeds or cuttings or produced by budding or grafting. The age of admissible layers is re-

## HEMLOCK

(*Tsuga Canadensis*)

	Per 100
12 to 18 ins., XXX, sheared, B&B. ....	\$100.00
18 to 24 ins., XXX, sheared, B&B. ....	150.00
2 to 2½ ft., XXX, sheared, B&B. ....	250.00

Also

**RHODODENDRON — KALMIA — AZALEAS**

Japanese Beetle B Certificate on All Shipments

Write for Price List.

## CURTIS NURSERIES

Callicoon, N. Y.

**QUALITY MERCHANDISE  
AT REASONABLE PRICES**

**C. L. VANDERBROOK & SON**  
MANCHESTER, CONN.

Wholesale Nurserymen Since 1922

## SPECIAL SPRING OFFERING OF TREES

See our advertisement in the

March 1 issue.

**KINGSVILLE NURSERIES**

Kingsville, Maryland



## BEFORE BUYING EVERGREENS—See Us

Our shippers are prepared to ship BALLED and BURLAPPED EVERGREENS in carload lots and can supply Japanese beetle certificates.

### ARBORVITAE

### HEMLOCK

### TAXUS

Our quality cannot be excelled.

	Each 100 rate		Each 100 rate
<b>Taxus cuspidata, B&amp;B</b>		<b>Taxus media Halloran,</b>	
15 to 18 ins. ....	\$2.25	B&B, 15 to 18 ins. ....	\$2.50
18 to 24 ins. ....	2.75	<b>Taxus media hicksi, B&amp;B</b>	
2 to 2½ ft. ....	4.50	12 to 15 ins. ....	2.00
<b>Taxus capitata (from seeds), B&amp;B</b>		15 to 18 ins. ....	2.25
15 to 18 ins. ....	2.50	18 to 24 ins. ....	2.50
18 to 24 ins. ....	3.00	<b>Taxus cuspidata nana, B&amp;B</b>	
2 to 2½ ft. ....	4.00	12 to 15 ins. ....	2.50
<b>Taxus media (Upright), B&amp;B</b>		15 to 18 ins. ....	3.75
18 to 24 ins. ....	3.00	<b>Thuja occidentalis pyramidalis</b>	
2 to 2½ ft. ....	4.00	2 to 3 ft. ....	2.00
2½ to 3 ft. ....	5.00	3 to 4 ft. ....	3.00
<b>Taxus media hatfieldi, B&amp;B</b>		<b>Tsuga canadensis</b>	
15 to 18 ins. ....	2.50	18 to 24 ins. ....	1.75
18 to 24 ins. ....	3.00	2 to 3 ft. ....	2.50
		3 to 4 ft. ....	3.50

Please refer to our ads on pages 21, 24 and 30 in the March 15 issue, for Lining-out Stock of all kinds.

**E. D. ROBINSON SALES AGENCY, Wallingford, Conn.**

*"A friendly, efficient service."*

## FAIRVIEW EVERGREEN NURSERIES

Fairview, Erie Co., Pa.

	Per 100	Per 1000
<b>Taxus cuspidata, 2-yr. T, 6 to 10 ins.</b> .....	\$22.50	\$180.00
<b>Taxus cuspidata, 2-yr. T, 10 to 15 ins.</b> .....	30.00	250.00
<b>Taxus media andersoni, 2-yr. T, 8 to 12 ins.</b> .....	25.00	200.00
<b>Taxus media andersoni, 2-yr. T, 12 to 15 ins.</b> .....	32.50	275.00
<b>Taxus media browni, 2-yr. T, 6 to 12 ins.</b> .....	32.50	275.00
<b>Taxus media hicksi, 2-yr. T, 6 to 10 ins.</b> .....	27.50	225.00
<b>Taxus media hicksi, 2-yr. T, 10 to 14 ins.</b> .....	37.50	325.00
<b>Taxus media wardi, 2-yr. T, 6 to 12 ins.</b> .....	32.50	275.00

These Taxus liners are strong 2-year stock grown in rows and tractor-cultivated.

<b>Rosa rugosa, 1-yr. sdgls., 4 to 6 ins.</b> .....	2.50	15.00
<b>Betula papyrifera, sdgls., 12 to 24 ins.</b> .....	5.00	40.00
<b>Betula papyrifera, sdgls., 2 to 3 ft.</b> .....	7.50	65.00
<b>Castanea mollissima, sdgls., 6 to 12 ins.</b> .....	12.00	100.00
<b>Castanea mollissima, sdgls., 12 to 18 ins.</b> .....	20.00	170.00

We have a surplus of *Ampelopsis quinquefolia*, 3-year. These are excellent for bank retainers. May we quote your needs?

### EVERGREENS

Seedlings and Transplants  
Spring, 1949

Write for price list.

**SUNCREST EVERGREEN NURSERIES**  
JOHNSTOWN, PA.

### BROWN BROTHERS CO.

Brighton Station  
Rochester 10, N. Y.

Growers of a complete line of nursery stock.

Write for our Trade Price List.

### CHINESE CHESTNUT TREES

Blight-resistant.

### TREES—TRANSPLANTS—LINERS

**THE GOLD CHESTNUT NURSERY**  
COWAN, W. Va.

### Old English BOXWOOD

(Wholesale Only)

SELLING OUT. Specimens 20 x 18 ins. and up; also very large specimens. No smaller stock left. Special discounts on carload or truckload orders. Prices on request. Inspection invited.

### BOXWOOD GARDENS

Mrs. R. P. Boyer High Point, N. C.

duced to a single year's growth after severance from the parent plant.

Exceptions are made for rhododendrons, including azaleas, or other genera or species of similar slow-growth habit, which may be 3-year-old seedlings or cuttings, or have three years' growth from the bud or graft or two years' growth after severance, in the case of layers.

This amendment has been adopted to permit the entry of slow-growing plants of a size that can withstand the shock of soil removal, transit to this country and fumigation and can still be reestablished here by the average plant grower. The slow-growing plants which now are being admitted are largely those requiring expert handling for survival and establishment.

The size-age limitations do not apply to naturally dwarf or miniature forms which are twelve inches or less in height from the soil line, nor to artificially dwarfed forms of the type popular in parts of the Orient. If an importer, when making his application for a permit to import a larger plant, can prove to the inspector that this import is necessary and it may be imported under conditions prescribed in the permit without added risk of pest entry, the inspector may authorize an exception to the limitations.

Herbaceous perennials which are usually imported in the form of root crowns or clumps are limited to one-year-old plants produced from single propagating units, or, when they consist of divided clump material, such as astilbe, are limited to divisions comparable to one-year-old plants produced from single propagating units.

Whenever the chief of the bureau of entomology and plant quarantine finds that plants of any type which, when limited by these regulations, are too young and small to be removed from the soil, transported and planted in the United States, he may establish other size-age limitations for them.

In the case of forest trees, species of plants used for understocks, and woody ornamental plants that are botanical species or varieties and grow true from seeds, only seeds may be imported. However, the inspector may issue a permit authorizing importation of plants rather than seeds of these items when the importer can prove that the desired plants can be produced by vegetative means only or that it is not practical or possible to import viable seeds.

WILEY B. ALDRICH, Uxbridge, Mass., is starting a nursery business.

## ANTS - BEETLE GRUBS - CHINCH BUGS EARWIGS - MOLE CRICKETS

—Killed with—

# SYNKLOR

## NEW CHLORDANE INSECTICIDE

Chlordane gives fast effective kill of turf-destroying insects, particularly ants. Beetle grubs in the ground are immobilized in 24-36 hours and reinfestation is controlled for at least two years.

The following Synklor formulations for turf insect control are available:

**SYNKLOR-5-D**, a dust containing 5% by weight of Chlordane.

**SYNKLOR-50-W**, a wettable powder containing 50% by weight of Chlordane.

**SYNKLOR-48-E**, an emulsion containing one (1) lb. of Chlordane per quart.

*For selective weed control use TUFOR-40, a triethanolamine base 2, 4-D stabilized for hard water. One (1) quart contains one (1) lb. of actual 2, 4-D.*

Write for our latest bulletins.



## UNITED STATES RUBBER COMPANY

Naugatuck Chemical Division

ROCKEFELLER CENTER

NEW YORK 20, N. Y.

### LONG ISLAND SHOW.

More than 550 persons attended the second annual garden show held by the Long Island Nurserymen's Association March 16 at the Garden City hotel, Garden City, N. Y., according to Hewlett W. Lewis, secretary.

Features of the show included twenty-seven horticultural exhibits and a panel discussion on various phases of home landscaping presented by six landscape nurserymen. The program was concluded with a question and answer period, and prizes were awarded for the best questions.

PAUL E. BROWN, 21 Richland avenue, Athens, O., has opened a landscaping business and will start his own nursery later this spring.

R. J. STOWE, Stowe's Florist, Greenville, S. C., who has been in the florists' business two years, announces that he is putting in nursery stock.

MEMBERS of the North Jersey Metropolitan Nurserymen's Association gathered March 24 at the nursery of President Harry Deverman, Clifton, who is recovering from illness, to prepare his stock so that he can be ready for spring trade.

## LINING-OUT STOCK

	Per 100	Per 1000
Andromeda Japonica, 2-yr. tr., 4 to 6 ins.	\$ 25.00	\$200.00
Andromeda Japonica, 2-yr. tr., 6 to 9 ins.	30.00	
Azalea Mollis, mixed colors, 2-yr. tr., 5 to 10 ins.	25.00	200.00
Azalea Mollis Edison (creamy-yellow), 2-yr. tr., 3 to 6 ins.	20.00	
Red Jap. Maple, bare root, 2-yr. grafts, 10 to 18 ins.	125.00	
Red Jap. Maple (seedlings, very good strain)		
3-yr. tr., whips, 10 to 15 ins.	40.00	
3-yr. tr., branched, 12 to 18 ins.	60.00	
Boxwood, Sempervirens, 3-yr. tr., 4 to 8 ins.	17.50	150.00
Cotoneaster Praecox, 2-yr. tr., 6 to 10 ins.	35.00	
Cotoneaster Horizontalis, 2-yr. tr., 4 to 6 ins.	20.00	
Cotoneaster Horizontalis, 2-yr. tr., 6 to 10 ins.	25.00	
Hydrangea Arborescens Gr., 1-yr. tr., 12 to 18 ins.	10.00	75.00
Juniperus Stricta (Greek), 1-yr. tr., 4 to 6 ins., heavy.	25.00	
Juniperus Stricta (Greek), 2-yr. tr., 8 to 10 ins., heavy.	50.00	
Juniperus Hibernica (Irish), 2-yr. tr., 7 to 10 ins.	25.00	225.00
Juniperus Pfitzeriana, 2-yr. tr., 8 to 10 ins.	35.00	300.00
Juniperus Pfitzeriana, strong 1-yr. grafts, 8 to 10 ins.	60.00	
Rhodotypos Kerrioides, 2-yr. tr., 10 to 15 ins.	10.00	
Syringa Belle de Nancy, 1-yr. grafts, 10 to 18 ins.	25.00	
Taxus Cuspidata, 2-yr. tr., 8 to 10 ins.	25.00	200.00
Taxus Brevifolia, 2-yr. tr., 5 to 8 ins.	30.00	
Taxus Capitata (from Jap. seeds), twice tr., 8 to 12 ins.	75.00	650.00
Taxus Hatfieldi, 2-yr. tr., 8 to 10 ins.	30.00	250.00
Taxus Hicksi, 2-yr. tr., 6 to 10 ins.	25.00	

## C. HOOGENDOORN

TURNER ROAD

NEWPORT, R. I.

## TAXUS MEDIA HALLORAN

The past winter proved this variety to be very well adapted for the middle western climate. We have 1, 2 and 3-year liners to offer.

**VERKADE'S NURSERIES**

NEW LONDON, CONN.

# Ohio Nursery School

By Margaret Sessler

Attendance at the annual nurserymen's school held February 25 at the Courthouse, Painesville, O., surpassed that of all previous years.

For the morning program, Dr. R. W. Neiswander, department of entomology, Ohio agricultural experiment station, Wooster, discussed "Insect Control in the Nursery"; Dr. L. C. Chadwick, department of horticulture, Ohio State University, spoke on "Progress in Chemical Weed Control," and Virgil Overholt, department of agricultural engineering, on "Drainage and Water Control."

The afternoon program opened with a panel discussion on trends in the nursery business, led by Henry J. Kohankie, Henry Kohankie & Son, Painesville. Others taking part were D. Barrett Cole, Cole Nursery Co.; Charles H. Beardslee, Beardslee Nursery; Robert Kallay, Donewell Nurseries, and Charles Kohankie, landscape contractor, all of Painesville; Paul Bosley, Bosley Nursery, Mentor; Arthur Slavin, chief of the regional division, Soil Conservation Service, Milwaukee, Wis., and Dr. L. C. Chadwick.

During the past fifteen years the trend has been toward an increasing demand for smaller-size nursery stock, said Mr. Kallay, adding that many acres of other types of stock are going to waste and that the shade tree business is actually a detriment to a successfully operating nursery. The demand seems to be away from the faster-growing types of evergreens, such as arborvitae.

Mr. Cole discussed briefly economic trends in the United States, pointing out that there are usually seven lean years followed by seven prosperous years. He said there was a slight economic slump at present, but that it probably would not last long. He traced the supply and demand of shade trees, evergreens and shrubs during the past twenty-five years.

The third panel speaker, Mr. Beardslee, stated that during the two years he has been in the nursery business he has learned that it is best to concentrate on the more popular varieties. "Buyers are becoming more selective, probably because conditions are tightening up," he said.

Continuing the panel, Mr. Bosley stressed the importance of growing higher-priced material to compete with the higher cost of labor. He cited the survey of the Bell Telephone Co. in Ohio which predicted

that the triangle formed by Cleveland, O., and Erie and Pittsburgh, Pa., eventually would become the Ruhr valley of America. He also emphasized specialization and the growing of material which no one else grows.

Speaking on consumer viewpoints, Charles Kohankie pointed out that the days of big estates are over and that nurserymen must build good will among the small homeowners who demand smaller sizes of plant material. He said that buyers are showing greater interest than before in broad-leaved evergreens, disease-resistant plants, hardy varieties of perennials and plants that do not require extensive maintenance.

Dr. Chadwick discussed objective trends in the nursery business, citing a trend in marketing practices toward the development of more sales lots. He stressed, however, that these lots should not be a dumping

ground for inferior stock. He also told of the trend toward an increase in the size of the landscape field, in the growing of limited stocks and in the need for changes in plant material, and he predicted a great demand for shade trees.

Arthur Slavin, whose work in soil conservation in nurseries takes him to fifteen states, seconded the statements of Charles Kohankie and mentioned the different types of consumers who required varying types of plant materials. He urged active membership in the state and national nurserymen's associations and suggested that nurserymen should have the right to participate in the agricultural price support program if they wished to do so.

Summarizing the discussion, Henry Kohankie pointed out that it was not possible to have controlled production because of human nature. He emphasized the difficulty in anticipat-

## ORNAMENTAL EVERGREENS

### Trees & Shrubs

#### BAGATELLE NURSERY

P. O. Huntington Station, N. Y.

#### ACER PLATANOIDES • NORWAY MAPLES

Look!	Look!
	Per 100
¾ to 1-in. cal. ....	\$ 75.00
1 to 1¼-in. cal. ....	100.00
1¼ to 1½-in. cal. ....	200.00
1½ to 1¾-in. cal. ....	325.00
1¾ to 2-in. cal. ....	375.00
2 to 2½-in. cal. ....	500.00

Additional charge of 10% will be added for balling and shipping. No charge will be made for loading bulk trucks.

When C.O.D. shipment is desired, a cash deposit of 25% must accompany order.

#### STATE ROAD NURSERY

State and Sproul Rds.  
Route 1 MEDIA, PA.

#### GROUND COVER PLANTS

Pachysandra terminalis, Per 100	Per 1000
Assorted field-grown plants	
Vinca minor, 2¼-in. pot-grown plants	\$ 6.00 50.00
Hedera helix, 2¼-in. pot-grown plants	10.00 90.00
	10.00 85.00

HUGH B. BARCLAY  
NARBERTH, PA.



## ORNAMENTAL STOCK

In Wide Assortment

Catalog on request. In addition to our very complete list of standard varieties, we offer many unusual and hard-to-find items.

PRINCETON PRODUCTS  
ARE QUALITY PRODUCTS

Send us your want list.

## PRINCETON NURSERIES

Princeton, N. J.

Phone—Princeton 1776



## SMALL FRUIT PLANTS

Thirty varieties of Grapes, including the

GOLDEN MUSCAT

also

Currants and Berry plants

FOSTER NURSERY CO., Inc.  
FREDONIA, N. Y.



# SCARFF'S Nursery



Headquarters for Small Fruit Plants

RED and BLACK RASPBERRY PLANTS

BOYSENBERRIES, 1 and 2-yr.

—Common and Thornless—

BLUEBERRIES, 12 to 18 ins. and 18 to 24 ins.

BLACKBERRIES—JUNE BERRIES

## ORNAMENTAL SHRUBS

Here are a few items in surplus. Send your list for lowest quotations.

Forsythia Spectabilis, 2 to 3 and 3 to 4 ft.  
 Ligustrum, Amur R. N., 2 to 3 ft.  
 Lonicera Fragrant., 2 to 3 ft.  
 Lonicera Tat. Rubra, 3 to 4 ft.  
 Lonicera Zabeli, 12 to 18 ins., 18 to 24 ins., 2 to 3 ft.  
 Magnolia Soul. Nigra, 2 to 3 ft. (Well branched, B&B)

Salix Caprea (French Pussy Willow), 3 to 4 ft.  
 Pyramidal Arborvitae, 3-ft. and 4-ft. sizes. Well filled out. Good color. Truck or carlots.

## FRUIT TREES

Well Grown—Heavily Rooted.

	11/16-in.	9/16-in.	7/16-in.
Per 100			
Montmorency Cherry, 2-yr.	\$0.90	\$0.75	\$0.60
August Supreme Cherry (sweet), hvy., 1-yr.	.90	.80	.65
Old Home Pear, 2-yr.	.75	.60	.40
Bradshaw Plum, 2-yr.	.80	.70	.60
Imperial Epineuse Plum, 2-yr.	.80	.70	.60
Stanley Plum, 2-yr.	.80	.70	.60



**W. N. SCARFF'S SONS, New Carlisle, Ohio**

ing the business of a nursery and said that if the price support program were extended to the nursery business, it would mean the destruction of the industry.

After the round table, Mr. Slavin described the progress which has been made in soil conservation in nurseries. Talks on "Insecticides for Controlling Turf Pests, Including Japanese Beetle," by Dr. Joseph Polivka, Ohio agricultural experiment station, Wooster, and on "The Best in Taxus," by Dr. Chadwick, concluded the school.

In the evening a dinner and entertainment program, sponsored by the Lake County Nurserymen's Association, was held at the Rose Room, Mentor. The tables were decorated with arrangements of daffodils, potted, pink azaleas and forsythias; their pastel colors being carried out in favors representing miniature sprinkling cans. Flowers were supplied by Joseph J. Havel, Mentor; C. W. Harris, Painesville, and Charles Kohankie. Dinner music was provided by a harpist.

After the dinner, Robert Kallay, president of the Lake County Nurserymen's Association, welcomed the nurserymen. Informal songs were presented by the "Eleventh Hour Four," a barbershop quartet consist-

## TAXUS LINERS

20 VARIETIES — SEND FOR LIST

We offer 70,000 taxus in 20 choice varieties, some 1-year and 2-year pots, some twice transplanted. Also a limited quantity of finished taxus. Write for complete wholesale list.

**EAGLE CREEK NURSERY CO., Inc.**  
 NEW AUGUSTA, INDIANA

## MAXWELL, BOWDEN & RICE, Inc.

Wholesale Nurseries

GENEVA, NEW YORK

Phone 2974

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E. W. WHITHAM  
 42 Gerard St.  
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E. D. ROBINSON  
 38 South Elm St.  
 Wallingford, Conn.

## BERBERIS THUNBERGI

	Per 100	Per 1000
9 to 12 ins., 2-yr. S.	\$4.00	\$35.00
12 to 18 ins., 2-yr. S.	5.00	40.00

**BROUWER'S NURSERIES**  
 Box 25 NEW LONDON, CONN.

## KOREAN PINE (Nut Pine)

For PARKS and ESTATES  
 3 to 5 feet

**ELFGREN NURSERIES**  
 East Killingly, Connecticut

## SURPLUS LINING-OUT STOCK

### JUNIPER GRAFTS

\$60.00 per 100

2000 Canaerti  
1000 Dundee  
1000 Glauca  
1000 Hill's Silver  
1000 Burki

### DECIDUOUS

	Each
1000 Zabeli Honeysuckle, 12 to 15 ins.....	\$0.10
100 White Birch, 5 to 6 ft.....	.60
300 White Birch, 4 to 5 ft.....	.40
800 Salix Babylonica, 6 to 8 ft.....	.70
500 Salix Babylonica, 5 to 6 ft.....	.50
600 Bechtel's Crab, 18 to 24 ins.....	.40
900 Floribunda Crab, 3 to 4 ft.....	.55
400 Hopa Crab, 3 to 4 ft.....	.55
400 Zumi Calocarpa Crab, 2 to 3 ft.....	.45

We also have small quantities of Schiedeckeri, Atro-sanguinea, Atropurpurea, Lemoine, Zumi and Zumi Calocarpa Crabs in 2 to 3-ft. sizes at 45c each.

## HOOK'S NURSERY

6 N. Main St.

Mt. Prospect, Ill.

### SPECIMEN LANDSCAPE MATERIALS

Our Specialty

## TAXUS

W. A. NATORP CO.

Cincinnati 29, Ohio

Approximately  
3,500 SALABLE EVERGREENS  
in variety

Taxus, Arborvitae, Cypress, Hemlock,  
Spruce, Pine, Juniper, \$1.00 each.

Also 2,000 3 to 7-year-old Taxus in  
variety, 200 Ilex Rotundifolia, some  
shrubs and shade trees. Investigate and  
make an offer. Long time given to move  
it or sell it. Located between Akron  
and Cleveland, Ohio. Write Box 617,  
care of American Nurseryman.

### ORNAMENTAL VINES

Clematis, Honeysuckle, Silver-lace, etc.  
Send for our price list.

JAMES I. GEORGE & SON  
FAIRPORT, N. Y.

### POTTED LINERS GRAFTS

(Beetle Certified)

HEASLEY'S NURSERIES  
Freeport Rd. BUTLER, PA.

### Trees, Evergreens, Shrubs Fruit Trees

Write for Our Wholesale Trade List

W. - T. Smith Corporation  
Telephone 2689 GENEVA, N. Y.

### PRIVET and BERBERIS

Splendid Stock

Write for Special Quotations

LESTER C. LOVETT  
MILFORD DELAWARE

ing of Gordon Douglas, leader; Jack Sweet, Burton Bartholomew and James Stevenson.

Daniel Scullin, president of the Painesville junior chamber of commerce introduced the speaker of the evening, Fred J. Milligan, former state director of commerce, Westerville, who spoke on "It Pays to Be Different," saying that this was merely another title for "A Beautification Program and Nursery Festival for Lake County."

He listed the reasons that certain Ohio towns were different and said that ninety-eight per cent of the persons who pass through Lake county probably do not know that it is a great nursery center. "We immediately become attractive when we advertise that we are different," he said, urging that a large-scale nursery festival, which would attract the entire state and nation, be planned for Lake county.

The film, "Miracle in Paradise Valley," which depicted the importance of farm and home safety, was introduced by George Garman, soil conservationist, a member of the educational committee of the Lake county farm and home safety council.

Dancing to the music of Barney Neville's orchestra followed the film.

F. G. Haskins, county agricultural agent, was chiefly responsible for planning the nurserymen's school. He was assisted by the program committee of the Lake County Nurserymen's Association. A record attendance at the dinner was attributed to the work of Robert Kallay and the following captains who were in charge of ticket sales: Steve Allen, Jr., Geneva; Maurice Champion, Perry; Gerard Klyn, Jr., Mentor; George Gens, Elyria; Zophar Warner, Willoughby, and William Youmans, Lawrence Brick and Margaret Sessler, Painesville.

### NORTH CAROLINA HOLDS STATE-WIDE CONFERENCE

Harold S. Daniels, Charlotte, N. C., was elected president of the North Carolina Nurserymen's Association at a state-wide nurserymen's conference sponsored jointly by the association and North Carolina State College of Agriculture, University of North Carolina, Raleigh, March 3 and 4 at the college. Other officers chosen were: Vice-president, E. H. Tinga, Tinga Nursery & Bulb Farm, Castle Hayne, and secretary-treasurer, Charles Orchard, Orchard Nursery, Apex.

Soil testing, soil management, fertilization, new insecticides and disease control, inspection and regulatory problems, planting design, re-

# Woodruff has the answer to your problem

Generations of turf superintendents have turned to Woodruff for the answer to any puzzling lawn or turf problems. They know Woodruff has the answer, and has the seed. We'd like to be of service to you.

LAWN SEED DIVISION

## F. H. WOODRUFF

TOLEDO  
ATLANTA  
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AND SONS, INC.  
MILFORD, CONN.  
SEED GROWERS  
MERCEDES, TEX.  
SACRAMENTO  
DALLAS

**Woodruff**  
SEEDS

tail and wholesale merchandising of ornamentals and landscaping were among the topics discussed.

Speakers at the meeting were Dr. James H. Hilton, dean of the college of agriculture and director of the agricultural experiment station; Dr. C. F. Smith, department of zoology; H. R. Garriss, department of botany; John B. Harris and H. E. Niswonger, department of horticulture; Dr. Frank Haasis, plant pathologist, and Dr. J. Fielding Read, department of agronomy, all of North Carolina State College of Agriculture.

Talks were given also by L. R. Roof, Chapel Hill, of the Soil Conservation Service; J. M. Melton, New River Nursery, Midway Park; C. H. Brannon, entomologist of the North Carolina state department of agriculture; Hubert Owens, head of the department of landscape architecture, University of Georgia, Athens, and Harold Seyler, Farr Nursery Co., Weiser Park, Pa.

THE Hudson Nursery, Hopkins, Minn., has been sold and renamed the Lundgren Nursery.

THE new nursery being started by Clayton C. Kaiser, 5280 Grand Haven road, Muskegon, Mich., will be known as Easy-Acres Nursery.

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TSUGA CANADENSIS		Each
3 to 4 ft.	.....	\$ 5.00
4 to 5 ft.	.....	7.50
5 to 6 ft.	.....	9.00
6 to 7 ft.	.....	12.50
JUNIPERUS PFITZERIANA		
18 to 24 ins.	.....	2.00
24 to 30 ins.	.....	2.50
30 to 36 ins.	.....	3.00
JUNIPERUS HORIZONTALIS PLUMOSA		
24 to 30 ins.	.....	2.50
30 to 36 ins.	.....	3.00

Price in lots of 100.

F.O.B. our nursery.

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## Healthy, Vigorous Plants, Growing in Cans

Bush Roses  
in popular varieties  
\$4.20 per doz.  
1-gal. cans

Climbing Roses  
Paul's Scarlet  
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\$4.80 per doz. 1-gal. cans

Hardy Carnations  
Red, Pink and Yellow  
\$6.00 per doz.  
1-gal. cans

Packed 4 per carton.  
Prices slightly higher in Dallas.

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Your Profits Grow in Verhalen Plants.



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of them!*

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HEAT**

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Cable sets come in handy 60-foot lengths, enough to heat 36 square feet of hot bed or bench frame. Cable is lead-covered for long life, comes in loops with both ends in an ordinary plug for 110-volt a-c or d-c outlet. 120-foot sets are available for 220-volt operation, and bulk cable for large installations. Thermostat also available for holding bed temperature anywhere up to 100°F.

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Soil Heating Bulletin  
GEA-5278. General  
Electric Co., Sec. 674-7,  
Schenectady 5, N. Y.



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## OBITUARY

**Burton H. Arterburn.**

Burton Hall Arterburn, 62, former owner of the Louisville Nurseries, St. Matthews, Ky., died March 2 at St. Anthony's hospital, Louisville. He was the son of the late Norbourne Arterburn, one of the first settlers at St. Matthews and founder of the Louisville Nurseries.

Survivors include his wife, Mrs. Hazelle Straeffer Arterburn, and three daughters, Mrs. J. H. Murphy, Oak Park, Ill.; Mrs. William Gardner, Hollywood, Fla., and Mrs. Jackson Countryman, Poland, O.

**Austin C. Marshall.**

Austin C. Marshall, 72, Temple City, Calif., a former partner in the Marshall Nurseries, Arlington, Neb., died of heart disease March 9 at his home.

Born in Hancock county, Ohio, in 1876, Mr. Marshall moved to Arlington, Neb., with his parents five years later. In 1904 he became a partner in the Marshall Nurseries and was active in the firm until 1916 when he sold his interest in the nursery and, with his sons, established a dairy farm. He sold this farm in 1943 and moved to Temple City, Calif.

Survivors include Mr. Marshall's widow, two sons, three daughters, three brothers and two sisters.

**Fred Gunstone.**

Fred Gunstone, 74, of the State Nursery & Seed Co., Helena, Mont., died February 2 at St. Peter's hospital, Helena, following an illness of two weeks.

Born in England in 1875, Mr. Gunstone came to the United States when he was 18 years old. He lived in the middle west before moving to Helena in 1916 and was married in 1902 to Effie Thayer, Lake Villa, Ill.

Employed by the State Nursery & Seed Co. since 1918, Mr. Gunstone was active in business until two weeks before his death.

Survivors include his widow, Mrs. Effie Gunstone; two daughters, Mrs. Ern Brooks, Bell, Calif., and Mrs. A. J. Matson, Minneapolis, Minn.; two sons, Harry and Wilfred, both of Helena; a sister, nine grandchildren and one great-grandchild.

**Arthur E. Kitzerow.**

Arthur E. Kitzerow, 50, operator of the Pearl Road Flowers & Nursery, Cleveland, O., for almost twenty years, died March 6.

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3 to 6 ins.	\$ 6.00	\$55.00
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9 to 12 ins.	11.00	...

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Priced to move.

Norway Spruce, sheared,  
3 to 4 ft.

White Birch, 1 1/2 to 4 ins.

Chinese Elm, 1 1/2 to 4 ins.

Some exceptionally straight.

American Elm, 1 1/2 to 3 ins.

Honey Locust, 1 1/2 to 3 ins.

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# NURSERY SEEDS

## Essentials for Spring Planting

	$\frac{1}{4}$ lb.	Lb.		$\frac{1}{4}$ lb.	Lb.
<b>ABIES cephalonica</b> .....	\$ 0.85	\$ 2.50	<b>PICEA excelsa (abies), Western Europe,</b>	\$ 1.50	\$ 4.50
<b>cilicica</b> .....	.85	2.50	fastest growing .....	4.00	12.00
<b>concolor, California</b> .....	1.35	4.00	<b>sitchensis</b> .....	2.00	6.00
<b>grandis, Northern Rockies</b> .....	1.25	3.75	<b>PINUS banksiana</b> .....	4.00	12.00
<b>nordmanniana</b> .....	.85	2.50	<b>caribaea</b> .....	2.00	6.00
<b>pectinata (alba)</b> .....	.60	1.75	<b>cembra</b> .....	.50	1.50
<b>pinapo</b> .....	.85	2.50	<b>contorta</b> .....	2.50	7.50
<b>pinapo glauca</b> .....	1.50	4.50	<b>excelsa (griffithi)</b> .....	1.00	3.00
<b>ARAUCARIA excelsa</b> .....	1.50	4.50	<b>halepensis</b> .....	.75	2.25
<b>CHAMAECYPARIS lawsoniana,</b>			<b>lambertiana</b> .....	1.40	4.25
from garden forms .....	1.00	3.00	<b>maritima (pinaster)</b> .....	.40	1.25
<b>lawsoniana aurea</b> .....	1.50	4.50	<b>monophylla (cembroides mon.)</b> .....	1.00	3.00
<b>lawsoniana pendula glauca</b> .....	1.50	4.50	<b>montana (mugo) uncinata (rostrata)</b> .....	1.65	5.00
<b>obtusa</b> .....	1.65	5.00	<b>montana (mugo) mughus, European Alps</b>	1.80	5.50
<b>obtusa aurea</b> .....	2.00	6.00	plantings near sea level .....	1.20	3.50
<b>pisifera</b> .....	2.00	6.00	<b>monticola</b> .....	2.20	6.50
<b>CRYPTOMERIA japonica, European seeds</b>	.65	2.00	<b>nigra, Central Europe</b> .....	1.35	4.00
<b>japonica, Oriental seeds</b> .....	1.00	3.00	<b>nigra canadensis</b> .....	1.75	5.25
<b>CUNNINGHAMIA lanceolata</b> .....	2.00	...	<b>ponderosa, Giant Timber strain</b> .....	1.50	4.50
<b>CUPRESSUS arizonica (glabra or bonita)</b>			<b>ponderosa, foothills Northern Rockies</b> .....	1.20	3.50
domestic seeds .....	1.35	4.00	<b>ponderosa scopulorum</b> .....	1.20	3.50
<b>arizonica, seeds from Southern Europe</b>	1.00	3.00	<b>radiata (insignis)</b> .....	1.45	4.25
<b>forbesi</b> .....	3.50	10.50	<b>resinosa, \$3.50 per oz.</b> .....	10.00	30.00
<b>goiveniana</b> .....	1.00	3.00	<b>rigida, Massachusetts</b> .....	1.35	4.00
<b>lustranica</b> .....	1.00	3.00	<b>rigida, large seeded, from New Jersey</b>		
<b>macnabiana</b> .....	1.65	5.00	pine barrens .....	1.50	4.50
<b>macrocarpa, domestic seeds</b> .....	1.20	3.50	<b>strobis</b> .....	1.50	4.50
<b>macrocarpa, from garden specimens</b> .....	1.35	4.00	<b>sylvestris, green strain</b> .....		
<b>aempevirens horizontalis</b> .....	.50	1.50	for ornamental use .....	1.35	4.00
<b>aempevirens pyramidalis (stricta)</b> .....	.60	1.75	<b>sylvestris, Timber strain</b> .....	2.00	6.00
<b>LARIX europaea (decidua)</b> .....	1.20	3.50	<b>PSEUDOTSUGA douglasii,</b>		
<b>leptolepis, 60% germination</b> .....	2.35	7.00	foothills Northern Rockies .....	3.00	9.00
<b>LIBOCEDRUS decurrens</b> .....	1.20	3.50	<b>TAXODIUM distichum, cleaned</b> .....	.60	2.00
<b>PICEA canadensis (glauca),</b>			<b>TAXUS cuspidata, upright form, clean</b> .....	1.65	5.00
from planted stands, Northern Europe	1.35	4.00	<b>media hicksii, D.E.</b> .....	2.65	8.00
<b>canadensis densata, Black Hills Spruce</b>	3.00	9.00	<b>THUJA orientalis</b> .....	.85	2.50
<b>excelsa (abies), Northern Europe,</b>			<b>orientalis aurea</b> .....	1.25	3.75
the vigorous Lowland strain .....	1.75	5.25	<b>orientalis nana</b> .....	1.10	3.25
<b>excelsa (abies), Northern Europe,</b>			<b>orientalis pyramidalis</b> .....	.90	2.75
extreme North, winter-burn resistant	1.50	4.50	<b>plicata, hardy Mountain strain</b> .....	2.50	7.50

## F. W. SCHUMACHER, Horticulturist

P. O. Box 131

JAMAICA PLAIN 30, MASS.

Masonic lodge, Mr. Kitzerow also belonged to the Thatcher chapter, Forest Cit Commandery, Lake Erie Consistory and Al Koran Shrine. He was a member of the Brooklyn Kiwanis Club.

Surviving is his widow, Mrs. Esther Kitzerow.

Ernest L. Hopkins.

Ernest L. Hopkins, 70, who operated the Hopkins Nursery at Withrow, Minn., died in late February. Mr. Hopkins was born in Oneka township, Minnesota, in 1878 and lived there all his life.

Survivors include his widow, Agnes Dunn Hopkins; three daughters, Florence, Withrow; Frances, St. Paul, and Mrs. Henry Vieter, Stillwater; three sons, Joseph, Stillwater; Glenn, Greenbush, and E. Lionel, Maringouin, La., and four grandchildren.

STEVE KECSKES has started a wholesale and retail growing and florists' business at 835 Livernois avenue, Ferndale 20, Mich.

OPERATED formerly under the name of Terrebaune Bulb Corp., the business of Mrs. S. R. Collins, Chesterton, Md., has been renamed the Chester Hall Farm.

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Standard Lawn Seed Mixtures priced for NURSERYMEN LANDSCAPE GARDENERS

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"Supreme" Quality SEEDS — PLANTS — BULBS and Growers' Accessories

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Collectors of Tree, Shrub and Wild Flower Seeds

Crude Drugs and Ornamentals

E. C. MORAN Stanford, Mont.

## PERENNIAL FLOWER SEEDS

Many of the best perennials can be grown from seeds. Best results can be had if they are sown before hot weather sets in. A simple, labor-saving method is to sow direct into open ground beds as soon as the ground can be worked. The young plants can be set in permanent quarters in August or September.

Aquilegia, Long-spurred. Blue Shades.

We are convinced this is the finest strain in existence, with immense long-spurred blooms in shades of blue, with white or creamy centers.

Pkt., \$0.50  $\frac{1}{4}$  oz., \$1.75 1 oz., \$6.00

This is only one of the many fine items listed in our new 1949 catalog. Send for your copy.

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## DAHLIA ROOTS

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Write today for wholesale price list N.  
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# New Books and Bulletins

DR. L. H. BAILEY.

Primarily the biography of Dr. L. H. Bailey, Andrew Denny Rodgers III 484-page biography, "Liberty Hyde Bailey," digresses from its subject often and at length to give a picture of horticultural science of the period, evaluating the work of many important plant scientists. It is also the story of the development of the state agricultural experiment stations and relates the many contributions to plant science made by these stations and by the state colleges of agriculture. The fourth in a series of books on great American botanists in which Mr. Rodgers is building the framework of a complete history of botany in America, "Liberty Hyde Bailey" has been published by Princeton University Press, Princeton, N. J., at \$7.50.

Based wholly on factual materials gathered in the author's many years of study on the work of plant scientists of this period, the many footnotes and excerpts from letters, documents and scientific publications make the volume valuable as a source book.

In recent years the public has been acquainted with Dr. Bailey through his botanic expeditions and his Hortorium at Cornell University, Ithaca, N. Y. In 1947, when he was 89 years old, Dr. Bailey spent a month exploring the Amazon river in Brazil, searching for palms and rare flora, and the following year spent his nineteenth birthday on a Caribbean island in search of plant specimens. Today, at 91, he is still active in the field of horticulture to which he has devoted his life.

Born the third son of L. H. Bailey, Sr., and Sarah Harrison Bailey, two early settlers on the Michigan frontier, Liberty Hyde Bailey, Jr., learned his love of plants from his parents and was furthered in his early horticultural efforts and studies by his mother. While studying at Michigan State College, East Lansing, he combined his love of horticulture with journalism by writing for the college's quarterly and other publications. These literary contributions were but the first of many to the field of plant science. By the early twentieth century, when his "Cyclopedia of American Horticulture" was published, Dr. Bailey had become known as one of the world's greatest agricultural educators, authors and editors.

Upon graduation from college, he joined the staff of Harvard University as assistant curator of its herbar-

ium, but was soon called back to Michigan State College as superintendent of the department of horticulture where he set to work to develop the thesis that the biological phase of horticulture is botany while the business phase is horticulture. In 1888 he became professor of horticulture at Cornell University and was appointed dean of the New York State College of Agriculture, Cornell University, and director of its agricultural experiment station. After ten years in these capacities he resigned under great protest from trustees, faculty and students to devote his time to travel and study.

In recent years Dr. Bailey and his daughter, Ethel Zoe, who has assisted him in his work, have gone on many expeditions to the Orient and South America, gathering a collection of cultivated plants from over the world.

## "We have 'em"

- \*Fruit Trees
- \*Shade Trees
- \*Evergreens
- \*Shrubs
- \*Roses
- \*Peonies
- \*Currants
- \*Gooseberries

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## SUGAR MAPLES

	Cash with Order	Per 100
5 to 6 ft. ....		\$ 50.00
6 to 8 ft. ....		75.00
1 to 1 1/4-in. ....		150.00
1 1/4 to 1 1/2-in. ....		200.00

**RED or SCARLET MAPLE**  
Same sizes and prices as  
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Same sizes and prices as  
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DAY LILIES • POPPIES • MUMS**

ALL YOUNG GROWN STOCK

Prompt Service

Send for Wholesale Prices

**C. F. WASSENBERG  
VAN WERT, O.**

Dr. Bailey has classified them and standardized their names, and in 1935 he presented his Hortorium to Cornell University, which included the herbarium containing more than 25,000 plant species in cultivation, and a library to accompany it.

## MODERN LANDSCAPING.

A handsome pictorial study as well as detailed verbal commentary of landscapes of the eighteenth century, which were characterized by the transition from the natural landscape to the garden; the nineteenth century tradition in gardens, and contemporary landscapes, which are characterized by the transition from the garden to the landscape, are given in the second edition of "Gardens in the Modern Landscape" by Christopher Tunnard, associate professor of city planning, Yale University,

## IN CARLOTS

American Elm, 1 1/4 and 1 1/2-in.  
Thurlo Willow, 5 to 6 ft., up to  
1 1/2-in.

Apple, 2 and 3-yr., XX,  
1 1/16 and 9/16-in.

Peach, 5/16 up to 9/16-in.

Lesser Quantities of:

Pear, Plum and Cherry.

Berberis Thunbergi, 12 to 18 and  
18 to 24 ins.

Forsythia, Honeysuckle Bush,  
Spiraea and Symphoricarpos in  
variety.

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**C. M. HOBBS & SONS, Inc.  
BRIDGEPORT, IND.**

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Specimen stock transplanted 4 and 5  
times. Sheared. In large truckload lots.  
Select them yourselves. 3 1/2-ft. to 5 1/2-ft.  
sizes. We grow the finest. Write for full  
particulars.

Also, a few Ball Carriers in stock.

**SUNNYVIEW NURSERIES**

George Colmorgen, Prop.

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## CANADA HEMLOCKS

QUALITY PLANTS

	Per 10	Per 100
2 to 3 ft., B&B. ....	\$2.25	\$2.00
3 to 4 ft., B&B. ....	3.00	2.75
4 to 5 ft., B&B. ....	3.75	3.50

Old English Boxwood, Hollies, Magnolias and Azaleas. Write for prices on large quantities.

**BOXWOOD NURSERIES  
MOCKSVILLE, N. C.**



New Haven, Conn., just published at \$5 by the Architectural Press, London, and Charles Scribner's Sons, New York city.

The first edition was published in England in 1938, and although there has been little creative work in garden design since, owing to the war, Professor Tunnard has spent some years studying and teaching landscape architecture in the United States so that he has been able to add to his book a selection of illustrations of modern American gardens as well as a series of annotated illustrations suitable for use with architecture which originally appeared in the Architectural Review.

The 178-page revised edition deals with contemporary garden design as a movement parallel to that which inspired contemporary ideas in architecture. However, the author points out that the garden of today is not contemporary but of the sentimental past and that most efforts at modern gardening are adaptations of old styles to fit new buildings. The new landscape is the garden without boundaries, he believes, and to meet this trend, Professor Tunnard devotes some discussion to communal gardens. Tracing the history of the landscaped garden to show its relation to life and landscape, the author shows how modern conceptions of the town and countryside could create a new idea of landscape and garden planning.

A postscript on the modern garden by Joseph Hudnut, dean of Harvard University, Cambridge, Mass., concurs with the author's belief that both the organic and the intuitive approaches to architecture and planning should be avoided, as the creative art has a firmer foundation when based on accumulation of acquired knowledge rather than on intuitiveness alone.

#### PRINCIPLES OF PRUNING.

The whys and wherefores of pruning ornamental trees and shrubs are discussed in a concise, practical manner in a new book, "Pruning Is Simple," written by John and Carol Grant and published at \$2.50 by Frank McCaffrey Publishers, Seattle, Wash. The authors, who also wrote "Trees and Shrubs for Pacific Northwest Gardens," have included the basic principles of pruning and have designed their book to enable gardeners to do pruning themselves or at least to prevent "gardeners" whom they might employ from damaging valuable trees and shrubs by careless or unintelligent pruning.

In answer to those who may ask

We have in surplus the following field-grown stock ready for prompt shipment.

- 250 Almond, Pink, own root, 18 to 24 inches
- 1000 Barberry, Japanese, 2 to 3 feet
- 1000 Fringe, Purple (Smoke Tree, *Rhus Cotinus*), 2 to 3 feet
- 1000 Hydrangea, Blue, field-grown
- 1500 Forsythia *Spectabilis*, 18 to 24 inches
- 1000 Forsythia *Spectabilis*, 12 to 18 inches
- 750 Snowberry, White, 2 to 3 feet
- 500 Snowberry, White, 18 to 24 inches
- 500 Snowberry, White, 12 to 18 inches
- 1500 Spiraea Anthony Waterer, 12 to 18 inches
- 500 Spiraea Billiardi, 2 to 3 feet
- 1000 Spiraea Billiardi, 18 to 24 inches
- 1000 Spiraea Billiardi, 12 to 18 inches
- 1000 Hawthorn, Washington (*Cordata*), 3 to 4 feet
- 1500 Aster, Beechwood Challenger
- 2500 Aster, Blue Gown
- 2000 Aster, Blue Eyes
- 1500 Aster, Adorable (similar to Harrington's Pink but blooms a week later)

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2000	<i>Taxus Cuspidata</i> , 6 to 8 ins.	Per 100
12,000	<i>Juniperus Chin. Pfitzeriana</i> , 6 to 8 ins.	\$22.50
		20.00

### FIELD FRAMES

5000	<i>Juniperus Hetzi Glauca</i> , 6 to 8 ins., 2-yr.	25.00
5000	<i>Juniperus Hetzi Glauca</i> , 6 to 8 ins., 1-yr.	20.00
2000	<i>Juniperus Hor. Pl. (Andorra)</i> , 6 to 8 ins., 2-yr.	20.00
4000	<i>Juniperus Hor. Pl. (Andorra)</i> , 6 to 8 ins., 1-yr.	17.50
2000	<i>Taxus Capitata</i> , 4 to 6 ins., 1-yr.	18.00
2000	<i>Taxus Cuspidata</i> , 4 to 6 ins., 2-yr.	20.00
2000	<i>Taxus Cuspidata</i> , 4 to 6 ins., 1-yr.	18.00
1200	<i>Taxus Intermedia</i> , 4 to 6 ins., 2-yr.	20.00
1200	<i>Taxus Media Hickoi</i> , 4 to 6 ins., 2-yr.	20.00
1300	<i>Taxus Media Hickoi</i> , 6 to 8 ins., 2-yr.	18.00
2000	<i>Thuja Occ. Globosa</i> , 6 to 8 ins., 2-yr.	20.00
4000	<i>Thuja Occ. Globosa</i> , 4 to 6 ins., 1-yr.	17.50
2000	<i>Thuja Occ. Pyramidalis</i> , 4 to 6 ins., 1-yr.	17.50

Terms: NET CASH WITH ORDER; PACKING FREE.

Orders will be filled in turn as received while our stocks last, subject to conditions beyond our control.

An order for 25 of the same variety and size sold at the 100 rate. Minimum order, 100 plants.

### ELMHURST NURSERIES, Inc.

York and Roosevelt Roads  
Ted W. Smith, Pres.

ELMHURST, ILL.  
Emil H. Martens, Mgr.

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In refrigerated storage.

Come to the source.

### ARP PECAN TREES

NURSERY CO.  
TYLER, TEXAS

Commercial grove or landscape.

Wholesale Catalog.

THERE IS ONLY ONE ARP NURSERY CO. — ACCEPT NO SUBSTITUTE.

**FOR STRONGER  
HEALTHIER SEEDLINGS**

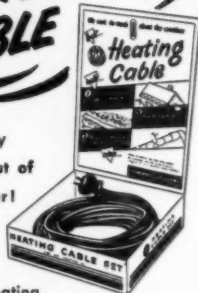
*and more  
of them!*

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- ✓ More accurately controlled
- ✓ Less costly to use

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**SOIL-HEATING  
CABLE**

Gets "lazy  
plants" out of  
bed earlier!



G-E Soil-Heating Cable sets come in handy 60-foot lengths, enough to heat 36 square feet of hot bed or bench frame. Cable is lead-covered for long life, comes in loops with both ends in an ordinary plug for 110-volt a-c or d-c outlet. 120-foot sets are available for 220-volt operation, and bulk cable for large installations. Thermostat also available for holding bed temperature anywhere up to 100°F.

Send for this FREE  
Soil Heating Bulletin  
GEA-5278. General  
Electric Co., Sec. 674-7,  
Schenectady 5, N. Y.



**GENERAL  
ELECTRIC**

## OBITUARY

**Burton H. Arterburn.**

Burton Hall Arterburn, 62, former owner of the Louisville Nurseries, St. Matthews, Ky., died March 2 at St. Anthony's hospital, Louisville. He was the son of the late Norbourne Arterburn, one of the first settlers at St. Matthews and founder of the Louisville Nurseries.

Survivors include his wife, Mrs. Hazelle Straeffer Arterburn, and three daughters, Mrs. J. H. Murphy, Oak Park, Ill.; Mrs. William Gardner, Hollywood, Fla., and Mrs. Jackson Countryman, Poland, O.

**Austin C. Marshall.**

Austin C. Marshall, 72, Temple City, Calif., a former partner in the Marshall Nurseries, Arlington, Neb., died of heart disease March 9 at his home.

Born in Hancock county, Ohio, in 1876, Mr. Marshall moved to Arlington, Neb., with his parents five years later. In 1904 he became a partner in the Marshall Nurseries and was active in the firm until 1916 when he sold his interest in the nursery and, with his sons, established a dairy farm. He sold this farm in 1943 and moved to Temple City, Calif.

Survivors include Mr. Marshall's widow, two sons, three daughters, three brothers and two sisters.

**Fred Gunstone.**

Fred Gunstone, 74, of the State Nursery & Seed Co., Helena, Mont., died February 2 at St. Peter's hospital, Helena, following an illness of two weeks.

Born in England in 1875, Mr. Gunstone came to the United States when he was 18 years old. He lived in the middle west before moving to Helena in 1916 and was married in 1902 to Effie Thayer, Lake Villa, Ill.

Employed by the State Nursery & Seed Co. since 1918, Mr. Gunstone was active in business until two weeks before his death.

Survivors include his widow, Mrs. Effie Gunstone; two daughters, Mrs. Ern Brooks, Bell, Calif., and Mrs. A. J. Matson, Minneapolis, Minn.; two sons, Harry and Wilfred, both of Helena; a sister, nine grandchildren and one great-grandchild.

**Arthur E. Kitzerow.**

Arthur E. Kitzerow, 50, operator of the Pearl Road Flowers & Nursery, Cleveland, O., for almost twenty years, died March 6.

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Kolkwitzia seedlings

### TIME TO ORDER

Kolkwitzia	Per 100	Per 1000
3 to 6 ins.	\$ 6.00	\$55.00
6 to 9 ins.	9.00	80.00
Rhus Cotinus		
3 to 6 ins.	6.00	55.00
6 to 9 ins.	9.00	80.00
9 to 12 ins.	11.00	...

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Norway Spruce, sheared,  
3 to 4 ft.

White Birch, 1 1/2 to 4 ins.

Chinese Elm, 1 1/2 to 4 ins.

Some exceptionally straight.

American Elm, 1 1/2 to 3 ins.

Honey Locust, 1 1/2 to 3 ins.

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# NURSERY SEEDS

## Essentials for Spring Planting

	¼ lb.	Lb.		¼ lb.	Lb.
<b>ABIES cephalonica</b> .....	\$ 0.85	\$ 2.50	<b>PICEA excelsa (abies), Western Europe,</b>	¼ lb.	Lb.
<b>clileca</b> .....	.85	2.50	fastest growing .....	\$ 1.50	\$ 4.50
<b>concolor, California</b> .....	1.35	4.00	<b>sitchensis</b> .....	4.00	12.00
<b>grandis, Northern Rockies</b> .....	1.25	3.75	<b>PINUS banksiana</b> .....	4.00	12.00
<b>nordmanniana</b> .....	.85	2.50	<b>caribaea</b> .....	2.00	6.00
<b>pectinata (alba)</b> .....	.60	1.75	<b>cembra</b> .....	.50	1.50
<b>pinapo</b> .....	.85	2.50	<b>contorta</b> .....	2.50	7.50
<b>pinapo glauca</b> .....	1.50	4.50	<b>excelsa (griffithi)</b> .....	1.00	3.00
<b>ARAUCARIA excelsa</b> .....	1.50	4.50	<b>halepensis</b> .....	.75	2.25
<b>CHAMAECYPARIS lawsoniana,</b>			<b>lambertiana</b> .....	1.40	4.25
from garden forms .....	1.00	3.00	<b>maritima (pinaster)</b> .....	.40	1.25
<b>lawsoniana aurea</b> .....	1.50	4.50	<b>monophylla (cembroides mon.)</b> .....	1.00	3.00
<b>lawsoniana pendula glauca</b> .....	1.50	4.50	<b>montana (mugo) uncinata (rostrata)</b> .....	1.65	5.00
<b>obtusata</b> .....	1.05	3.00	<b>montana (mugo) mughus, European Alps</b>	1.80	5.50
<b>obtusata aurea</b> .....	2.00	6.00	<b>montana (mugo), from shelterbelt</b>		
<b>pisifera</b> .....	2.00	6.00	plantings near sea level .....	1.20	3.50
<b>CRYPTOMERIA japonica, European seeds</b>	.65	2.00	<b>monticola</b> .....	2.20	6.50
<b>japonica, Oriental seeds</b> .....	1.00	3.00	<b>nigra, Central Europe</b> .....	1.35	4.00
<b>CUNNINGHAMIA lanceolata</b> .....	2.00	...	<b>nigra calabarica</b> .....	1.75	5.25
<b>CUPRESSUS arizonica (glabra or bonita)</b>			<b>ponderosa, Giant Timber strain</b> .....	1.50	4.50
domestic seeds .....	1.35	4.00	<b>ponderosa, foothills Northern Rockies</b> .....	1.20	3.50
<b>arizonica, seeds from Southern Europe</b>	1.00	3.00	<b>ponderosa scopulorum</b> .....	1.20	3.50
<b>forbesi</b> .....	3.50	10.50	<b>radiata (insignis)</b> .....	1.45	4.25
<b>goveniana</b> .....	1.00	3.00	<b>resinosa, \$3.50 per oz.</b> .....	10.00	30.00
<b>luskiana</b> .....	1.00	3.00	<b>rigida, Massachusetts</b> .....	1.35	4.00
<b>macnabiana</b> .....	1.05	3.00	<b>rigida, large seeded, from New Jersey</b>		
<b>macrocarpa, domestic seeds</b> .....	1.20	3.50	pine barrens .....	1.50	4.50
<b>macrocarpa, from garden specimens</b> .....	1.35	4.00	<b>strobus</b> .....	1.50	4.50
<b>sempervirens horizontalis</b> .....	.50	1.50	<b>syvestris, green strain</b> .....		
<b>sempervirens pyramidalis (stricta)</b> .....	.60	1.75	for ornamental use .....	1.35	4.00
<b>LARIX europaea (decidua)</b> .....	1.20	3.50	<b>syvestris, Timber strain</b> .....	2.00	6.00
<b>leptolepis, 60% germination</b> .....	2.35	7.00	<b>PSEUDOTSUGA douglasii,</b>		
<b>LIBOCEDRUS decurrens</b> .....	1.20	3.50	foothills Northern Rockies .....	3.00	9.00
<b>PICEA canadensis (glauca),</b>			<b>TAXODIUM distichum, cleaned</b> .....	.60	2.00
from planted stands, Northern Europe	1.35	4.00	<b>TAXUS cuspidata, upright form, clean</b> .....	1.65	5.00
<b>canadensis densata, Black Hills Spruce</b>	3.00	9.00	<b>media hicksi, D.B.</b> .....	2.65	8.00
<b>excelsa (abies), Northern Europe,</b>			<b>THUJA orientalis</b> .....	.85	2.50
the vigorous Lowland strain .....	1.75	5.25	<b>orientalis aurea</b> .....	1.25	3.75
<b>excelsa (abies), Northern Europe,</b>			<b>orientalis nana</b> .....	1.10	3.25
extreme North, winter-burn resistant	1.50	4.50	<b>orientalis pyramidalis</b> .....	.90	2.75
			<b>plicata, hardy Mountain strain</b> .....	2.50	7.50

**F. W. SCHUMACHER, Horticulturist**

P. O. Box 131

JAMAICA PLAIN 30, MASS.

Masonic lodge, Mr. Kitzerow also belonged to the Thatcher chapter, Forest Cit Commandery, Lake Erie Consistory and Al Koran Shrine. He was a member of the Brooklyn Kiwanis Club.

Surviving is his widow, Mrs. Esther Kitzerow.

**Ernest L. Hopkins.**

Ernest L. Hopkins, 70, who operated the Hopkins Nursery at Withrow, Minn., died in late February. Mr. Hopkins was born in Oneka township, Minnesota, in 1878 and lived there all his life.

Survivors include his widow, Agnes Dunn Hopkins; three daughters, Florence, Withrow; Frances, St. Paul, and Mrs. Henry Vieter, Stillwater; three sons, Joseph, Stillwater; Glenn, Greenbush, and E. Lionel, Maringouin, La., and four grandchildren.

STEVE KECSKES has started a wholesale and retail growing and florists' business at 835 Livernois avenue, Ferndale 20, Mich.

OPERATED formerly under the name of Terrebaune Bulb Co., the business of Mrs. S. R. Collins, Chesterton, Md., has been renamed the Chester Hall Farm.

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# New Books and Bulletins

DR. L. H. BAILEY.

Primarily the biography of Dr. L. H. Bailey, Andrew Denny Rodgers III 484-page biography, "Liberty Hyde Bailey," digresses from its subject often and at length to give a picture of horticultural science of the period, evaluating the work of many important plant scientists. It is also the story of the development of the state agricultural experiment stations and relates the many contributions to plant science made by these stations and by the state colleges of agriculture. The fourth in a series of books on great American botanists in which Mr. Rodgers is building the framework of a complete history of botany in America, "Liberty Hyde Bailey" has been published by Princeton University Press, Princeton, N. J., at \$7.50.

Based wholly on factual materials gathered in the author's many years of study on the work of plant scientists of this period, the many footnotes and excerpts from letters, documents and scientific publications make the volume valuable as a source book.

In recent years the public has been acquainted with Dr. Bailey through his botanic expeditions and his Hortorium at Cornell University, Ithaca, N. Y. In 1947, when he was 89 years old, Dr. Bailey spent a month exploring the Amazon river in Brazil, searching for palms and rare flora, and the following year spent his ninety-thirtieth birthday on a Caribbean island in search of plant specimens. Today, at 91, he is still active in the field of horticulture to which he has devoted his life.

Born the third son of L. H. Bailey, Sr., and Sarah Harrison Bailey, two early settlers on the Michigan frontier, Liberty Hyde Bailey, Jr., learned his love of plants from his parents and was furthered in his early horticultural efforts and studies by his mother. While studying at Michigan State College, East Lansing, he combined his love of horticulture with journalism by writing for the college's quarterly and other publications. These literary contributions were but the first of many to the field of plant science. By the early twentieth century, when his "Cyclopedia of American Horticulture" was published, Dr. Bailey had become known as one of the world's greatest agricultural educators, authors and editors.

Upon graduation from college, he joined the staff of Harvard University as assistant curator of its herbar-

ium, but was soon called back to Michigan State College as superintendent of the department of horticulture where he set to work to develop the thesis that the biological phase of horticulture is botany while the business phase is horticulture. In 1888 he became professor of horticulture at Cornell University and was appointed dean of the New York State College of Agriculture, Cornell University, and director of its agricultural experiment station. After ten years in these capacities he resigned under great protest from trustees, faculty and students to devote his time to travel and study.

In recent years Dr. Bailey and his daughter, Ethel Zoe, who has assisted him in his work, have gone on many expeditions to the Orient and South America, gathering a collection of cultivated plants from over the world.

Dr. Bailey has classified them and standardized their names, and in 1935 he presented his Hortorium to Cornell University, which included the herbarium containing more than 25,000 plant species in cultivation, and a library to accompany it.

## MODERN LANDSCAPING.

A handsome pictorial study as well as detailed verbal commentary of landscapes of the eighteenth century, which were characterized by the transition from the natural landscape to the garden; the nineteenth century tradition in gardens, and contemporary landscapes, which are characterized by the transition from the garden to the landscape, are given in the second edition of "Gardens in the Modern Landscape" by Christopher Tunnard, associate professor of city planning, Yale University,

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American Elm, 1 1/4 and 1 1/2-in.  
Thurlo Willow, 5 to 6 ft., up to 1 1/2-in.

Apple, 2 and 3-yr., XX,

11/16 and 9/16-in.

Peach, 5/16 up to 9/16-in.

### Lesser Quantities of:

Pear, Plum and Cherry.

Berberis Thunbergi, 12 to 18 and 18 to 24 ins.

Forsythia, Honeysuckle Bush, Spiraea and Symphoricarpos in variety.

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5 to 6 ft.	.....	\$ 50.00
6 to 8 ft.	.....	75.00
1 to 1 1/4-in.	.....	150.00
1 1/4 to 1 1/2-in.	.....	200.00

RED or SCARLET MAPLE  
Same sizes and prices as  
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Specimen stock transplanted 4 and 5 times. Sheared. In large truckload lots. Select them yourselves. 3 1/2-ft. to 5 1/2-ft. sizes. We grow the finest. Write for full particulars.

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## CANADA HEMLOCKS

### QUALITY PLANTS

	Per 10	Per 100
2 to 3 ft., B&B.	.....	\$2.25 \$2.00
3 to 4 ft., B&B.	.....	3.00 2.75
4 to 5 ft., B&B.	.....	3.75 3.50

Old English Boxwood, Hollies, Magnolias and Azaleas. Write for prices on large quantities.

BOXWOOD NURSERIES  
MOCKSVILLE, N. C.

New Haven, Conn., just published at \$5 by the Architectural Press, London, and Charles Scribner's Sons, New York city.

The first edition was published in England in 1938, and although there has been little creative work in garden design since, owing to the war, Professor Tunnard has spent some years studying and teaching landscape architecture in the United States so that he has been able to add to his book a selection of illustrations of modern American gardens as well as a series of annotated illustrations suitable for use with architecture which originally appeared in the *Architectural Review*.

The 178-page revised edition deals with contemporary garden design as a movement parallel to that which inspired contemporary ideas in architecture. However, the author points out that the garden of today is not contemporary but of the sentimental past and that most efforts at modern gardening are adaptations of old styles to fit new buildings. The new landscape is the garden without boundaries, he believes, and to meet this trend, Professor Tunnard devotes some discussion to communal gardens. Tracing the history of the landscaped garden to show its relation to life and landscape, the author shows how modern conceptions of the town and countryside could create a new idea of landscape and garden planning.

A postscript on the modern garden by Joseph Hudnut, dean of Harvard University, Cambridge, Mass., concurs with the author's belief that both the organic and the intuitive approaches to architecture and planning should be avoided, as the creative art has a firmer foundation when based on accumulation of acquired knowledge rather than on intuitiveness alone.

#### PRINCIPLES OF PRUNING.

The whys and wherefores of pruning ornamental trees and shrubs are discussed in a concise, practical manner in a new book, "Pruning Is Simple," written by John and Carol Grant and published at \$2.50 by Frank McCaffrey Publishers, Seattle, Wash. The authors, who also wrote "Trees and Shrubs for Pacific Northwest Gardens," have included the basic principles of pruning and have designed their book to enable gardeners to do pruning themselves or at least to prevent "gardeners" whom they might employ from damaging valuable trees and shrubs by careless or unintelligent pruning.

In answer to those who may ask

We have in surplus the following field-grown stock ready for prompt shipment.

- 250 **Almond, Pink**, own root, 18 to 24 inches
- 1000 **Barberry, Japanese**, 2 to 3 feet
- 1000 **Fringe, Purple (Smoke Tree, Rhus Cotinus)**, 2 to 3 feet
- 1000 **Hydrangea, Blue**, field-grown
- 1500 **Forsythia Spectabilis**, 18 to 24 inches
- 1000 **Forsythia Spectabilis**, 12 to 18 inches
- 750 **Snowberry, White**, 2 to 3 feet
- 500 **Snowberry, White**, 18 to 24 inches
- 500 **Snowberry, White**, 12 to 18 inches
- 1500 **Spiraea Anthony Waterer**, 12 to 18 inches
- 500 **Spiraea Billiardi**, 2 to 3 feet
- 1000 **Spiraea Billiardi**, 18 to 24 inches
- 1000 **Spiraea Billiardi**, 12 to 18 inches
- 1000 **Hawthorn, Washington (Cordata)**, 3 to 4 feet
- 1500 **Aster, Beechwood Challenger**
- 2500 **Aster, Blue Gown**
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12,000	<b>Juniperus Chin. Pfitzeriana</b> , 6 to 8 ins.	20.00

### FIELD FRAMES

5000	<b>Juniperus Hetzi Glauca</b> , 6 to 8 ins., 2-yr.	25.00
5000	<b>Juniperus Hetzi Glauca</b> , 6 to 8 ins., 1-yr.	20.00
2000	<b>Juniperus Hor. Pl. (Andorra)</b> , 6 to 8 ins., 2-yr.	20.00
4000	<b>Juniperus Hor. Pl. (Andorra)</b> , 6 to 8 ins., 1-yr.	17.50
2000	<b>Taxus Capitata</b> , 4 to 6 ins., 1-yr.	18.00
2000	<b>Taxus Cuspidata</b> , 4 to 6 ins., 2-yr.	20.00
2000	<b>Taxus Cuspidata</b> , 4 to 6 ins., 1-yr.	18.00
1200	<b>Taxus Intermedia</b> , 4 to 6 ins., 2-yr.	20.00
1200	<b>Taxus Media Hicksi</b> , 4 to 6 ins., 2-yr.	20.00
1300	<b>Taxus Media Hicksi</b> , 6 to 8 ins., 2-yr.	18.00
2000	<b>Thuja Occ. Globosa</b> , 6 to 8 ins., 2-yr.	20.00
4000	<b>Thuja Occ. Globosa</b> , 4 to 6 ins., 1-yr.	17.50
2000	<b>Thuja Occ. Pyramidalis</b> , 4 to 6 ins., 1-yr.	17.50

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725 Pfitzer Juniper	6 to 9 ins., xx, field.	30.00	250.00
100 Jap. Procumben Juniper	6 to 9 ins., xx, field.	25.00	....
200 Silver Star Juniper (Spreading Scop.)	4 to 6 ins., xx, field.	30.00	....
EUONYMUS PATENS LINERS			
2000 Small leaf, 4 to 6 ins., x		10.00	80.00
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CHINESE ELM SEEDLINGS			
25,000 9 to 12 ins.		.85	7.50
25,000 12 to 18 ins.		1.65	12.50
22,000 18 to 24 ins.		2.25	19.00
4000 2 to 3 ft.		3.25	29.00
AMERICAN ELM SEEDLINGS			
5000 9 to 12 ins.		.85	7.50
1000 12 to 18 ins.		1.65	12.50
MAPLE, SILVER, SEEDLINGS			
1000 9 to 12 ins.		1.40	12.00
1000 12 to 18 ins.		2.10	18.00
OSAGE ORANGE SEEDLINGS			
5000 6 to 9 ins.		.50	4.00
2000 9 to 12 ins.		.70	6.00
1000 12 to 18 ins.		1.20	10.00
500 18 to 24 ins.		1.70	14.00

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(Patent No. 99)			
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60 18 to 24 ins.		2.90	25.00
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300 Medium		3.00	25.00
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250 Medium		2.75	25.00
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50 2 to 3 ft.		5.00	40.00
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COLUMBINE, 2-yr.		Per 10	Per 100
400 Mrs. Scott Elliott		\$1.40	\$12.00
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ASCLEPIUS TUBEROSA			
200 2-yr.		1.40	12.00
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150 Beechwood Challenger		2.10	18.00
175 Blue Plume		2.10	18.00
650 Harrington's Pink		1.80	15.00
DAISY, SHASTA, 1-yr.			
500 Alaska		1.20	10.00
DELPHINIUM, 2-yr.			
100 Belladonna		1.40	12.00
200 Bellamosum		1.40	12.00
GYPSOPHILA, 2-yr.			
100 Oldhamiana		1.40	12.00
50 Pacifica		1.40	12.00
100 Panicalata		1.20	10.00
HEMEROCALLIS			
300 Double Kwanso		1.80	15.00
LYTHRUM			
450 Morden's (Bright Pink)		1.80	15.00
VALERIANA RUBRA			
200 Garden Heliotrope		1.80	15.00
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Roses, rhododendrons, azaleas, camellias, forsythias and evergreens are among the plants discussed in the 60-page book, which treats the subject of pruning by seasons. Valuable information, explanatory diagrams, clever line drawings and attractive typography combine to make "Pruning Is Simple" a worth-while and enjoyable book for gardeners.

### ROSES FOR THE SOUTH.

Since all of the books on roses, in the words of the author, "seem written for a climate in the latitude of Connecticut," Bessie Mary Baird has undertaken what she calls "a lighthearted treatise" for the gardener of the south in "Roses for Southern Gardens," just published by the University of North Carolina Press, at \$5. Although the pages of the book number not much over 100 and they are not crowded with text, the book is handsome in format and binding and in the inclusion of eight full-color plates of prominent patented roses.

Mrs. Baird, who is said to have one of the most beautiful gardens in the south and who is active in Georgia garden organizations, has set down a good deal of information on planting and culture, in addition to comments on a number of varieties, to guide the southerner who would like to enjoy roses as much as his fellow enthusiast in the north. Nurserymen who encounter customers who lack success with their roses in the south will do well to recommend this volume to them.

### PACIFIC COAST GUIDE.

According to the foreword, "Pacific Coast Gardening Guide," by Norville Gillespie, just published by Doubleday & Co., at \$3, was written in response to many requests for a garden book covering conditions on the Pacific coast. Because of the author's thirteen years' experience as garden editor for Sunset magazine and subsequently for the San Francisco Chronicle, he seems fitted to provide the answers to questions of the average gardener and perhaps for the more advanced as well.

He asserts that to garden well on the Pacific coast one should plant for bloom throughout the year. The

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chapter on weather conditions indicates that in most localities that should be possible. The book, however, covers a great deal of material that would be applicable to any climatic zone, though the instructions for various plants are particularly pertinent to Pacific coast conditions.

The author covers a great deal of ground in the 306-page book, for about half of the twenty-six chapters are on general topics or different phases of gardening, while the other chapters are devoted to specific plants, such as roses, tuberous begonias, rhododendrons, fuchsias, camellias, azaleas and lilies, or to groups of plants such as subtropical, greenhouse, lath house, rock garden and water garden plants. Besides covering an extended territory concisely, the author provides lists of recommended reading at the end of each chapter, listing books, bulletins and magazines.

#### "ORNAMENTAL CHERRIES."

When "Ornamental Cherries," by Collingwood Ingram, was published by Country Life, Ltd., London, England, last year this interesting book of 260 pages was reviewed at some length in these columns by Walter B. Clark, San Jose, Calif., whose long interest in flowering cherries is well known. The book is now obtainable on this side of the water from Charles Scribner's Sons, New York, at \$10 per copy.

#### SHRUBS FOR MILD ENGLISH COUNTIES.

Planters of shrubs and trees in the milder counties of England have unusual opportunities for growing a wide range of rare and beautiful plants, providing they can solve the problem of wind shelter and can avoid relying too much on plants which might be destroyed by an abnormal frost. This is the opinion expressed by W. Arnold-Forster in his book, "Shrubs for the Milder Counties," published recently by Country Life, Ltd., London, and Charles Scribner's Sons, New York city.

Mr. Arnold-Forster's chapter on wind and shelter, which lists wind-hardy plants and methods of protecting the more tender plants from strong sea winds, is based on many years' experience in his garden high on a Cornish moor and on his other gardening experience throughout England.

Special features of the 349-page book include a foreword by Lord Aberconway, president of the Royal

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Horticultural Society, a chapter on magnolias by G. H. Johnstone and forty photographic illustrations of the shrubs and trees described in the text.

The chapter on planting for roadsides and towns gives special attention to the milder counties, but the longest chapter, entitled "A General Planting List," reviews a wide range of shrubs, including some hardy ones, which would be of interest also to gardeners in the colder counties of England.

"Shrubs for the Milder Counties," which sells for \$10, was published under the auspices of the Cornwall branch of the Council for the Preservation of Rural England.

### ANNUAL TESTS IN 1948.

The twelfth annual report on the performance of annuals in the test garden of Pennsylvania State College in 1948 is now available in pamphlet form, compiled by E. I. Wilde and L. T. Blaney, of the department of horticulture, Pennsylvania State College. The tests include 385 samples of annuals and ten of perennial hollyhocks, of which eleven samples had been observed also in the 1947 All-America test, and twenty-eight samples represented in the All-America selections test for 1948. Nurserymen may obtain the pamphlet, "Trials of Annual Flowers, 1948," paper No. 1483, in the Journal series, by writing to the Pennsylvania agricultural experiment station, Pennsylvania State College, State College, Pa.

### BULLETINS RECEIVED.

Two new leaflets on the Dutch elm disease problem in Connecticut have been published recently by the Connecticut agricultural experiment station, New Haven. The first, entitled "Saving Your Valued Elms," describes the present status of the disease, its probable future and what one can do about it. Pointing out that the individual can do much to protect valued elms, the bulletin suggests selective rather than wholesale treatment of trees. Although Dutch elm disease has been present in Connecticut for fifteen years, to date less than one per cent of the state's elms have been attacked. The second leaflet, "Combating the Dutch Elm Disease," is a revision of an earlier publication of the same name and deals with specific methods of fighting the disease.

The great variation of results found in testing the effects of DDT residues on house flies is reported in



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bulletin 524, "Toxicity of DDT Residues," published by the Connecticut agricultural experiment station, New Haven. Written by Neely Turner and Nancy Woodruff, the 36-page bulletin describes the effects of time of exposure, coverage and tenacity on insects. The many graphs and tables, included in the leaflet, summarize and clarify the text.

Insect and disease controls in various types of fruit orchards are described in circular 634, "Pest Control in Commercial Fruit Plantings," published by the extension service in agricultural and home economics, University of Illinois, Urbana. Written by Dwight Powell, S. C. Chandler and Victor W. Kelley, the circular includes spray schedules for apples, pears, peaches, apricots, plums, cherries, currants, gooseberries, grapes, strawberries and brambles. These schedules list the application and purpose, the time to apply and materials to use. Information on rodent and spray materials, including a key for identifying newer organic materials, is also a feature of the 40-page bulletin.

The effects of dry lime-sulphur spray and elemental sulphur spray and dust on scab control, leaf burning, fruit quality, bloom, trunk growth and fruit yield of McIntosh apple trees are compared in bulletin 464, "Comparative Effects of Certain Sulphur Fungicides on McIntosh Apple Trees," published recently by the Maine agricultural experiment station, Orono. This 32-page bulletin, written by Donald Folsom, plant pathologist, reports on experiments carried on from 1928 to 1943 inclusive with 335 McIntosh apple trees in forty-five 10-tree plots. Results found by investigators in other states on the comparative effects of sulphur fungicides are similar to those found in the Maine studies, according to the bulletin. Several explanatory graphs and tables are included in the booklet.

The best methods of pruning apple and pear trees are described and illustrated in extension bulletin 381, "Pruning Apple and Pear Trees," published in January by the agricultural extension service of the State College of Washington, Pullman. John C. Snyder and W. A. Luce present detailed information on the general pruning of fruit trees, as well as on pruning in windy areas, lowering tall trees, spacing trees, caring for pruning wounds and other related subjects. In addition to descriptions of various patterns for training trees, the bulletin contains suggestions on pruning tools and the best times for pruning.

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4 to 5 ft.....	2.00
5 to 6 ft.....	2.50
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3 to 4 ft.....	1.50
4 to 5 ft.....	2.00
5 to 6 ft.....	3.00
6 to 7 ft.....	4.00
<b>Juniperus Communis Kiyonoi</b>	
3 to 4 ft.....	1.50
4 to 5 ft.....	2.25
5 to 6 ft.....	3.00
<b>Juniperus Chinensis Excelsa Stricta (Spiny Greek)</b>	
18 to 24 ins.....	1.50
24 to 30 ins.....	2.00
30 to 36 ins.....	2.50
3 to 3 1/2 ft.....	3.00
3 1/2 to 4 ft.....	4.00
<b>Juniperus Virginiana (Red Cedar)</b>	
5 to 6 ft.....	3.50
6 to 8 ft.....	4.50
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30 to 36 ins.....	3.00
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<b>Forsythia For. (Golden Bell)</b>	
2 to 3 ft., 2-yr., well br.	15.00
<b>Spiraea Vanhouttei</b>	
18 to 24 ins., well br.	10.00
<b>Spiraea Prunifolia (Bridal Wreath)</b>	
18 to 24 ins., 2-yr. transplant	20.00
<b>Weigela Floribunda</b>	
(Red Weigela)	
18 to 24 ins., br.	15.00
<b>Weigela Rosea (Pink Weigela)</b>	
2 to 3 ft., 2-yr., well br.	15.00
18 to 24 ins., 2-yr., well br.	10.00

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18 to 24 ins., br. with 20 to 40 canes, about 50 per cent with bloom buds; all plants B&B and boxed	150.00
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3 to 4 ft., lightly br.	25.00
4 to 5 ft., lightly br.	40.00
5 to 6 ft., well br.	75.00
<b>Cercis Canadensis</b>	
(Am. Redbud)	
3 to 4 ft., lightly br.	25.00
5 to 6 ft., well br.	50.00
<b>California Privet</b>	Per 1000
18 to 24 ins., well br.	\$35.00
2 to 3 ft., hvy., well br.	45.00
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## COVER ILLUSTRATION.

### Lagerstroemia Indica.

Because of its popularity in that section, the crape myrtle, *Lagerstroemia indica*, has been called the lilac of the south, but there are important differences: Its season of bloom is longer, covering from two to four months; generally speaking, the flowers are more profuse, because the plant is not so particular as to soil; its foliage is attractive, and propagation is quite easy. On the other hand, while the range of color in the crape myrtle is from white, through pink and red, to lavender and purple, a true blue is lacking and the whites are likely to be vigorous neither in growth nor bloom. Perhaps the reason is that, because of its ease of propagation, the crape myrtle has not attracted the attention of hybridizers, as has the lilac. A few firms in the south have developed selections as to color, and there is one named variety, William Toovey, watermelon-pink. With attention from hybridizers, the crape myrtle might be extended in its range of color, improved in shape of plant and increased in its hardiness.

Definitely hardy as far north as Maryland, the crape myrtle is occasionally flowered farther north, either in protected locations or where it has the vigor to produce new wood and flower after being frozen back to the ground.

The popularity of the crape myrtle in the south has led northerners to attempt planting it north of its zone of hardiness, either in tubs that can be moved indoors in winter or in the garden as a one-season plant, inasmuch as it flowers on the new wood and some types flower the same year as the cuttings root. While the crape myrtle blooms almost continuously for two or three months in the south, it flowers up to four times during July and October in the north. One drawback to its use as a one-season plant is the occasional tendency to stand still for a time without leafing out. In other respects the plant is readily transplanted.

Easy of propagation, the crape myrtle grows from seeds sown when ripe in autumn, from softwood cuttings under glass, from hardwood cuttings in the field and from root cuttings. Indeed, the ease with which the southern gardener can grow his own crape myrtle from a neighbor's bush seems to have limited nurserymen's interest in its propagation.

Where it flourishes, the crape myrtle can be used in a variety of ways in the landscape. It may be

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Demand for our stock has sold us out on some items, and we are short on others. Stock is grown, handled and packed to bring repeat orders. Prices are based. Cash with order.

<b>American Arborvitae</b>	Per 100	Per 1000
3-yr. S., 4 to 8 ins.	\$3.50	\$30.00
2-yr. S., 2 to 4 ins.	3.00	25.00
<b>Juniperus Horizontalis</b>		
2-yr. S., 4 to 8 ins.	4.00	...
<b>Colorado Blue Spruce</b>		
3-yr. S., 3 to 5 ins.	3.50	30.00
2-yr. S., 2 to 3 ins.	3.00	25.00
<b>Norway Spruce</b>		
2-yr. S., 2 to 4 ins.	3.00	25.00
<b>White Pine</b>		
2-yr. S., 2 to 4 ins.	3.00	25.00
<b>American Arborvitae, 5,000 lots or over,</b>		
\$5.00 per 1000 less.		
<b>Ostrich Plume Ferns.</b>	A fine, hardy fern.	
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<b>Spiraea Vanhouttei</b>	Per 100
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<b>Weigela, Pink</b>	
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2 to 3 ft., Br.	12.50
<b>Mock Orange</b>	
12 to 18 ins., Br.	10.00
2 to 3 ft., Br.	12.50
3 to 4 ft., Br.	15.00

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MT. STERLING, KY.

used in shrub borders or as an accent plant. It can be used formally and pruned as a standard. Where growth is most vigorous, it can be trained in tree form. Since it flowers on new wood, the crape myrtle makes a splendid show as an informal hedge, not sheared.

#### SOUTHWESTERN NOTES.

The Garden Mart is the new name given to Krell's Landscape Service & Supply, 7136 Wornall road, Kansas City, Mo., by Russell Archer, who purchased it recently.

Gene Cashman, owner of the Fergus Falls Nursery, Fergus Falls, Minn., and Mrs. Cashman spent a month's vacation in Florida and California. They returned home about the middle of March.

An explosion in a boiler damaged one of the greenhouses of Huff's Gardens at Burlington, Kan., in early March.

A lath house about eighty feet long has been added to the salesyard of Holsinger Nursery Co., Kansas City, Kan. The grounds are being rearranged to provide more room for customer parking and to make it easier to display stock.

About thirty members attended the regular monthly meeting of the Kansas City Association of Nurserymen March 8 at the Wagon Wheels restaurant, Overland Park. There was no formal program, but Evert Asjes, Jr., Rose Hill Gardens, Kansas City, told of his recent trip to Europe. He and his wife returned in early March after a two months' stay in Holland. They also had been to England and France.

The winter meeting of the Association of Kansas Landscape Architects was held March 6 at Manhattan. About fifty persons were present. After a dinner the group went to Margaret Knerr's Flower Shop for the business meeting and program.

Officers elected for the coming year were Homer Jameson, Topeka, president, and George Fisher, Salina, secretary.

Marguerite Allen, Wichita, Kan., who last year was an exchange teacher to Brighton, Sussex, England, gave a talk on the landscapes of England, illustrated with color pictures which she had taken.

Ralph Ricklefs, Jr., Salina, was honored by being presented with the first key awarded by the association to the most outstanding student in landscape gardening at Kansas State College, Manhattan. The award is to be an annual event, and the name of each winner will be engraved on a bronze plaque in the Horticulture building on the campus. J. J. P.

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We have the famous **NEW SUPERFECTION** Everbearing Strawberry. Get started with this superior Everbearer now. Our stock is direct from the originator. Write for prices today.

We also offer the following list of stock for immediate shipment. All prices F.O.B. Bridgman, boxing at cost. Per 1000

Cumberland Black Raspberry, No. 1 tips.....	\$30.00
New Logan Black Raspberry, No. 1 tips.....	30.00
New Morrison Black Raspberry, No. 1 tips.....	37.50
Latham Red Raspberry, 1-yr., No. 1.....	45.00
Concord Grapevines, 1-yr., No. 1.....	50.00
Concord Grapevines, 2-yr., No. 1.....	65.00

We also have a surplus in Elberta and Halehaven Peach and other varieties of Strawberry plants. Your Want List will be appreciated.

### The ACKERMAN NURSERIES

Bridgman, Michigan  
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A Wonderful Growing Season has enabled us to produce this year the finest stock we have grown in a complete assortment of

APPLE	PEACH	CHERRY	GRAPE
SHRUBS	EVERGREENS	SHADE TREES	

Write for your wholesale list.

Wire or phone for special quotations.

Adelbert E. Weston, Pres.  
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## NEOSHO NURSERIES CO. NEOSHO MO.

### CERTIFIED BLUEBERRY PLANTS

1-year Rooted Cuttings, 2 and 3-year Nursery Plants, all varieties.

Propagated from stock taken from our own productive farms.

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SEND for RIGHT WHOLESALE PRICES.

**GALLETTA BROTHERS'**  
**BLUEBERRY FARMS**  
HAMMONTON, NEW JERSEY

2,000 ONE-YEAR APPLE ON DOUGLIS (MALLING V)  
(STOCK GROWN BY US FOR 40 YEARS), 3 1/4 to 5 ft. McIntosh, Cortland, Double Red Delicious, Jonathan, Red Rome.  
RED LAKE RED CURRANT, heavy, 2-yr., No. 1  
STANDARD APPLE TREES, various, 1 1/4 to 3-in., 7 to 9 ft., bearing.  
AMERICAN ARBORVITAE, up to 10 ft.  
LILACS ON OWN ROOTS, leading varieties, flowering, up to 7 feet.  
HEAVY PLANTS FOR LANDSCAPING.  
Write for List.  
SAMUEL FRASER NURSERY  
GENESEO, N. Y.

GRAPEVINES, CURRANTS, GOOSE-BERRIES and BERRY PLANTS.

All varieties of Small Fruit Plants drastically reduced. Write for special quotations on quantity lots.

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The following list of material is ready for immediate or future shipment. All prices F.O.B. Bridgman, boxing at cost. Usual terms. Cash with order earns free boxing.

### GRAPES

	Per 100	Per 1000
Concord, 2-l	\$10.00	\$ 80.00
Concord, 1-l	8.00	60.00
Niagara, 2-l	11.00	90.00
Niagara, 1-l	9.00	70.00
Catawba, 2-l	11.00	90.00
Catawba, 1-l	9.00	70.00
Fredonia, 2-l	11.00	90.00
Fredonia, 1-l	9.00	70.00
Delaware, 2-l	14.00	120.00
Delaware, 1-l	11.00	90.00
Van Buren, 2-l	35.00	.....
Van Buren, 1-l	25.00	.....
Sheridan, 1-l	14.00	.....

### BLACKBERRIES

Eldorado, transplants	6.50	55.00
No. 1, R.C.		Sold out
Alfred, transplants	6.50	55.00
No. 1, R.C.		Sold out
Early Harvest, No. 1, R.C.	5.00	40.00

### BOYSENBERRIES AND DEWBERRIES

Boysenberry (Common), No. 1, tips	5.00	40.00
Boysenberry (Thornless), No. 1, tips	5.50	45.00
Lucretia Dewberry, No. 1, tips	5.00	40.00

### CURRENTS

Wilder, 3-yr., heavy	15.00	130.00
2-yr., No. 1	12.00	100.00
Red Lake, 2-yr., No. 1	16.00	.....
1-yr., No. 1	12.00	.....

### GOOSEBERRIES

Downing, 2-yr., No. 1	30.00	.....
Houghton, 2-yr., No. 1	25.00	.....
Champion, 2-yr., No. 1	25.00	.....

### RED RASPBERRIES

Latham, transplants	7.50	65.00
1-yr., No. 1	6.00	50.00
Chief, transplants	7.00	60.00
1-yr., No. 1	5.50	45.00
Sunrise, transplants	7.00	60.00
1-yr., No. 1	5.50	45.00
Indian Summer, transplants	8.00	70.00
1-yr., No. 1	6.50	55.00
St. Regis, transplants	7.00	60.00
1-yr., No. 1	5.50	45.00

### BLACK RASPBERRIES

Cumberland, No. 1, tips	4.50	35.00
Logan, No. 1, tips	4.50	35.00
Morrison, No. 1, tips	5.00	40.00

### PURPLE RASPBERRIES

Sodus, No. 1, tips	5.50	.....
--------------------	------	-------

### ASPARAGUS

Paradise and Washington, 3-yr., heavy	4.00	30.00
2-yr., No. 1	2.30	18.00
1-yr., No. 1	1.70	12.00
1-yr., in 10,000 lots	.....	10.00

### VICTORIA RHUBARB

1 1/2-in. and up, whole roots	8.00	75.00
1 to 1 1/2-in., whole roots	5.50	50.00
3/4 to 1-in., whole roots	4.00	35.00
1/2 to 3/4-in., whole roots	3.00	25.00

### RED RHUBARB

Canada Red, No. 1, divisions	40.00	350.00
McDonald, No. 1, divisions	30.00	250.00

### HORSE-RADISH

Cuttings, 4 to 5 ins.	2.00	15.00
Whole roots	4.50	35.00

### BLUEBERRIES

Rancocas (Early), Rubel (Midseason), Jersey (Late)	Each	Per 100
2-yr., 9 to 12 ins.	\$0.40	\$32.50
3-yr., 12 to 18 ins.	.55	47.50
4-yr., 18 to 24 ins.	.75	67.50

### KRIEGER'S WHOLESALE NURSERY

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Telephone 22

## NEW GREENHOUSE RANGE AT MICHIGAN STATE.

Construction of a new greenhouse range of 57,000 square feet to be built for research in the plant sciences at Michigan State College, East Lansing, was officially started in February with a ground-breaking ceremony. The commissioner of agriculture, representatives from the various agricultural industries, the dean of the school of agriculture at Michigan State College and other members of the college staff participated in the ceremony.

The Michigan legislature appropriated \$300,000 for the structure which will be divided into fourteen individual houses, in turn to be partitioned into fifty-seven individual compartments to facilitate experimental work. Each compartment will be controlled separately by automatic steam regulators and the most modern equipment available, including photoelectric controls, a solar compensator and manually operated central controls.

Automatic ventilation will be installed in four houses. In addition to the dark rooms to be built for studies in flowering and length of day, a propagation house designed especially for the propagation of nursery stock will also be equipped with a dark chamber for studies using controlled light, humidity and temperatures.

To facilitate the work with growth regulators, separate houses will be equipped. A special divided house will be used for the study of insects under controlled conditions. All of the houses except two will be of Lord & Burnham steel frame construction and will be 36x110 feet. They will be erected by Foster, Schermerhorn & Foster, Lansing. The other two will be built by Albert J. Lauer, St. Paul, Minn., and will be of aluminum construction.

In addition to the new greenhouse range, a modern headhouse and service building is being erected to facilitate the research program to be carried on in the greenhouses. Refrigerators, bulb storage rooms and laboratory facilities will be provided there.

The department of horticulture will use directly about 37,000 square feet of the new range, and the departments of botany and plant pathology, entomology, soils and farm crops will be assigned the rest. The entire range will be operated as a plant science unit, and much cooperative work will probably be done by the departments.

Plans are already under way for the development of research projects on roses, carnations, chrysanthemums.

## DWARF APPLE and MALLING STOCK

Limited quantity.

1 and 2-year  
3 to 4-foot trees.

Write for prices.

### GOLDEN MUSCAT GRAPES

Per 10 Per 100

2-year, No. 1 \$2.50 \$20.00

1-year, No. 1 2.00 15.00

### CONCORD GRAPES

2-year, No. 1 . . . 9.00

50 at 100 rate.

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Canandaigua, N. Y.

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### NURSERIES

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## STILL AVAILABLE IN QUANTITY

Such Items As:

Latham Raspberries, No. 1 and 2.  
Chipman's Canada Red Rhubarb  
New Rhubarb (Valentine)  
Pixwell Gooseberry, 2-l and 1-l  
Red Lake Current, 2-l.  
Plum and Bush Cherry, seedlings.

### SUMMIT NURSERIES

STILLWATER, MINN.



mums, snapdragons, azaleas, poinsettias and hydrangeas, according to Prof. Paul R. Krone, head of the floriculture program at the college. In addition, cooperative projects are being planned with the departments of botany and plant pathology, entomology and soils to expand the research program in floriculture and ornamental horticulture.

The new range was planned by committees representing the college departments and industries. The industries' committee included B. W. Toornman, G. Van Bochove & Bro., Inc., Kalamazoo, vice-president of the Michigan State Florists' Association, chairman; Arthur Watson, Arthur L. Watson Nurseries, Grand Rapids, of the Michigan Association of Nurserymen; John Haack, Armada, president of the Vegetable Growers' Council; George Farley, Albion, president of the Michigan Horticultural Society, and Lester Taylor, secretary of the Bean Growers' Association.

The college committee appointed by E. L. Anthony, dean of the division of agriculture, was comprised of Prof. Paul Krone, chairman; Dr. H. B. Tukey, head of the department of horticulture; Dr. William Drew, head of the department of botany and plant pathology; Dr. C. E. Millar, head of the department of soils; Prof. Ray Hutson, head of the department of entomology, and Prof. Roy Decker, head of the department of farm crops.

### SAGINAW ACTIVITIES.

At a recent meeting of the Saginaw Valley Nurserymen's Association at the home of George Ward, Elliot Rice, Cass River Nurseries, Saginaw, Mich., was elected president and R. W. Steffer, Bay City Nurseries, Bay City, vice-president. Theodore Laetz, Laetz Hobby Farm, Bay City, was reelected secretary, and George Ward was chosen treasurer. John Stark, Stark Nursery, Midland, was named a member of the executive committee.

Plans for the summer meeting of the Michigan Association of Nurserymen to be held in August at Bay City were discussed. Following the meeting a luncheon was held for twenty members and their wives.

The next meeting will be held April 6 at the home of Secretary Laetz at Bay City.

The Saginaw Valley Nurserymen's Association also recently held its second annual banquet at Chanticleer tavern, with an attendance of 135 persons. R. W. Steffer, the toastmaster for the evening, introduced

		PEACHES					
		11/16-	9/16-	7/16-	5/16-	2 to	18 to
		in.	in.	in.	in.	3 ft.	24 ins.
G. Jubilee		90	450	1800	1200	590	120
J. H. Hale		300	700	500	315	120	...
		CHERRIES, 1-yr.				2 to	18 to
				in.	3 ft.	24 ins.	18 ins.
Montmorency						2500	1200
Napoleon		200	20	100	160		
Schmidt		400		230	307		
Windsor		550		250	220		
		PLUMS and PEARS, 2-yr.				11/16-	9/16-
				in.	in.	in.	in.
Blue Damson				180	300	200	70
Grand Duke				110	120	70	28
Shrops. Damson					250	400	75
Stanley Prune				150	220	120	...
Bartlett				80	260	180	...
Kieffer				70	200	100	...
		5/8-in.	1/2-in.	3/8-in.	4 ft.	3 ft.	24 ins.
Dwarf Bartlett		26	375	366	23	84	26
		IN FIELD					
		1-yr. Shrops. Damson, Stanley and Italian Prune Plums, 9/16-in., 7/16-in. and 5/16-in.					
		1-yr. Bartlett and Kieffer Pears, 9/16-in. and 7/16-in.					
		Downing Gooseberries—2100, 2-1; 2100, 2-2.					
		Red Jacket Gooseberries—650, 2-1; 600, 2-2.					
		Cumberland Raspberry Tips—35,000.					
		Logan Raspberry Tips—11,000.					

State number wanted for special quotation.

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## PIXWELL GOOSEBERRIES

(Originated at North Dakota State Agricultural College)

Ranked at the top in all cooking tests. Very large berries, light green, ripening to pink, outyielding all varieties. Easy to pick.

	Per 25	Per 50	Per 100
2-year, No. 1.....	\$8.75	\$16.50	\$30.00
2-year, No. 2.....	7.50	14.00	25.00



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Blakemore	Tenn. Shipper
Dunlap	Tenn. Supreme
Klondike	Gem
Klonmore	Missionary

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Bridgman, Michigan

## VICTORIA RHUBARB ROOTS

	Per 100	Per 1000
1 1/4 to 2-in.....	\$7.50	\$50.00
1 to 1 1/4-in.....	5.00	35.00
3/4 to 1-in.....	3.50	22.50
1/2 to 3/4-in.....	2.50	15.00
WASHINGTON ASPARAGUS		
3-yr., heavy .....	5.00	20.00
300 or more at 1000 rate.		
ASNCRAFT PLANT NURSERY, Copemish, Mich		

## Bearing-size BLUEBERRY PLANTS

Cabot	Stanley	
Rancocas	Rubel	
Concord	Jersey	
Pioneer	Burlington	
Each per 10 100 1000		
6 to 12 ins.	\$0.40	\$0.30 \$0.25
12 to 18 ins.	.50	.40 .35
18 to 24 ins.	.60	.50 .45

Prices are per plant and for 2 and 3-yr. stock. Well branched and heavy rooted.



We can give immediate shipment.  
**BOUNTIFUL RIDGE NURSERIES**  
Princess Anne, Md.

## Wholesale Surplus for Spring Delivery

Concord Grape,  
2-yr., No. 1, and 1-yr., No. 1.

Cumberland Raspberry,  
Tips and Transplants

Latham and New Logan Raspberry,  
Suckers and Transplants.

Boysenberry, Dewberry  
Currants and Asparagus Roots

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## We wish to purchase...

Evergreens, Fruit Trees,  
Shrubs, etc.

Send your surplus list to  
**THE PONTIAC NURSERY CO.** Romeo, Mich.

Before you buy...

## PLUM and PEACH

Get our Wholesale Quotations

**EDWARD BACON & SON**  
Wholesale growers since 1882  
DANVILLE, N. Y.

the following guests: C. A. Boyer, Lansing, chief of the Michigan department of plant industry; Frank Leffler, of the state nursery inspection department; A. W. Krieger, Bridgman, and Bernard Ward, Lansing, president and secretary, respectively, of the Michigan Association of Nurserymen. Also present were N. I. W. Kriek, Cottage Gardens, Lansing; Arthur L. Watson, Watson Nurseries, Grand Rapids, and Mr. Durond, Durond Nursery.

After the dinner members were entertained by R. Nentwig and his accordion and Mr. Jones, who played the guitar and sang western songs. Mr. Nentwig then played for dancing. Each lady present at the banquet received a corsage of carnations.

Theodore Laetz, Sec'y.

## PLANT NOTES.

[Continued from page 18.]

acid, moist soil in full sun. In the absence of moisture, a little shade will help, but experience here showed that sunshine and a fair supply of moisture are to be preferred. If these conditions and a fairly fertile soil are supplied, gardeners will probably find that the opinion sometimes expressed in amateur garden magazines that the plant is finicky will be found to be without foundation. It is easily grown from fall-sown seeds, and seeds are usually available in this country.

## Chrysanthemum Morifolium.

For several years during the thirties I was intrigued by a plant that came into the garden from several nurseries under the label of Chrysanthemum morifolium but could not measure up to the botanists' description of that species. This finally led me to obtain seeds of true C. morifolium from a European botanic garden and also led to the identification by an eastern botanist of the plant which had been masquerading as C. morifolium. The conclusion was reached that C. morifolium always has white flowers, is tender here and has other characteristics which set it apart from the pink-flowered plant which usually passes as morifolium.

This plant, which is probably correctly C. morifolium gracile, with its inch-wide, single, pink daisies on lax stems, that become procumbent on a level surface if not supported and pendant when grown in a vertical crevice, might well have been one of the parents of what moderns know as cascade chrysanthemums. It was hardy here and made a good wall plant for garden planting, where it displayed its myriad flowers in late

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Peach Trees, 1-year-old stock, all grades and latest popular varieties.

Plums and Apricots—we still have a good supply.

Cherry Trees, Early Richmond and Montmorency.

Shade Trees and Evergreens.

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June Bud Peaches, now ready for sale. Good lot of varieties.

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## GRAPEVINES

Heavy, well rooted

2-yr. Concord and Niagara

1-yr. Concord

Hydrangea P.G.

Peach

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## AMAZING NEW GRAPE

Sensational discovery, Black Beauty.

1 to 1 1/4 ins. in dia., vine heavy grower, regular heavy bearer. Ripens this latitude through October. Very finest eating raw, jelly, wine and preserves. 2-yr.-old plants, \$2.00; 1-yr., \$1.50. Patent pending.

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Apple, Peach, Pear, Plum and Cherry.

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Golden Eagle, Ill.

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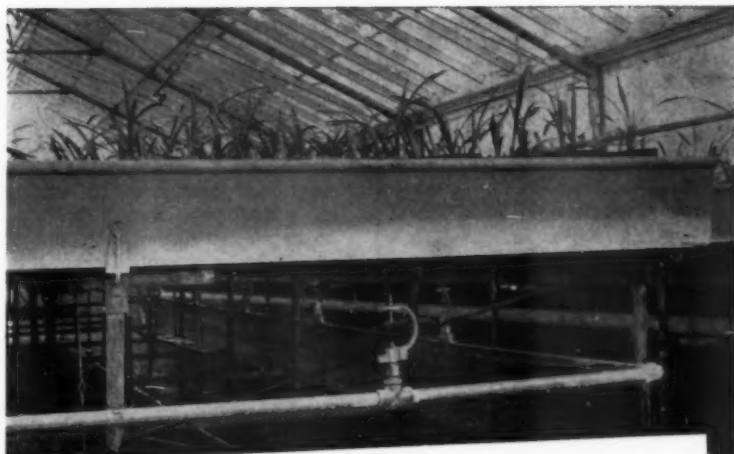
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ROSE GROWERS  
Scappoose, Oregon

September and early October. It also could be used in other parts of the garden, either with or without support, depending on the location. Gardeners would like it, I believe, if they saw it growing in attractive surroundings, not only because of its late flowering but also because of its floriferous nature. Propagation is from seeds, which are slow in germination but are sure from fall sowing, from cuttings in the usual chrysanthemum way and from divisions.

### *Lychnis Viscaria.*

I notice that at least two nurseries of national scope are featuring the double form of the German catchfly as a novelty this year. It is no novelty, of course, for it was known when I was a youngster, and that was not yesterday. It is heartening, however, to see the old favorite taking a new lease on life. And it may be the means of introducing an excellent plant to a host of gardeners who do not know it.

It is only natural that as showy a plant as *Lychnis viscaria*, which is native to most parts of Europe, early should have attracted the attention of gardeners. It is mentioned in the early literature of that continent, and it is said to have held the public's fancy to this day. In the United States it has had a somewhat checkered career, having attained popularity until gardeners were led astray by pastel enthusiasts, after which anything with so bright a color as this catchfly was put on the black list. The pendulum is apparently



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\$9.00 per 100, \$80.00 per 1000, except where otherwise noted.

*Calluna vulgaris alba*  
*Calluna vulgaris aurea*  
*Calluna vulgaris County Wicklow*  
*Calluna vulgaris foxi nana*,  
 \$11.00 per 100.  
*Calluna vulgaris nana*  
*Calluna vulgaris pygmaea*  
*Calluna vulgaris rubra*  
*Erica carnea King George*  
*Erica carnea Springwood White*  
*Erica mediterranea maxima*

### CONIFERS

<i>Cham. laws. ellwoodi</i> , R. C. only,	Per 100	Per 1000
average 4 to 6 ins.,	\$ 8.00	\$ 70.00
2 to 4 ins., transplants	9.00	80.00
4 to 6 ins., transplants	12.00	110.00
<i>Cham. laws. fletcheri</i> , R. C. ....	8.00	....
<i>Cham. pisifera squarrosa</i> <i>veitchii</i> , strong R. C. ....	8.00	....
<i>Cryptomeria japonica nana</i> (dwarf globe), R.C. ....	10.00	....
<i>Cryptomeria japonica lobbi</i> , (dwarf upright), R. C. ....	10.00	....
<i>Juniperus comm. fastigiata</i> (Improved Irish Juniper), R. C. ....	8.00	....
transplants	10.00	....
<i>Thuja occ. aurea</i> <i>variegata</i> , R. C. ....	8.00	....
<i>Thuja occ. pyramidalis</i> , strong R. C., about 5 to 8 ins. ....	10.00	....

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swinging back to normal now, and we may soon see these lively shades popular again.

Gardeners' long association with *L. viscaria* has yielded several color forms, including white, which is not too exciting a garden plant in my estimation; pink, and red, as well as a dwarf form of four or five inches instead of the twelve inches of the type and the double-flowered one which is now receiving the attention of national advertisers.

At the present time the double variety which has bright rose-red flowers on foot-tall stems and a long season of production perhaps holds most promise for profits to commercial growers. It will grow satisfactorily in poor, dry soil, though it does better in a fairly rich soil with sufficient moisture. *L. viscaria* is readily propagated from divisions in the double form and color selections, or from seeds in the type.

### PLANTS LANDSCAPE ARCHITECTS PREFER.

[Continued from page 8.]

planted in evergreens. This, of course, would not be true in a region where evergreens are native. Among the evergreens, cedars and pines seem to be the most worth while for large-scale planting. We only use spruces, firs and hemlocks where special protection and care are assured. We consider yews by far the best evergreens for foundation planting on an east or north exposure. We are always in need of more yews and would specify them in greater numbers if the price were not so high. Their slow growth will always make them relatively expensive, but we hope the present scarcity will be relieved by more propagation.

There is a class of plants which we believe should be given more consideration in this region. We can never hope to have the wealth of broad-leaved evergreens here that are seen in the east, in the south and on the west coast. However, on account of their scarcity, those we have are most thoroughly appreciated. The evergreen varieties of euonymus and mahonia, the hollies, the firethorns, particularly *Pyracantha pauciflora*; the Mentor barberry, the abelia, all are invaluable in providing interest during the early winter months. We are constantly on the lookout for other plants to add to this small list of hardy broad-leaved evergreens and would welcome further experimentation in this field.

There is a long list of dependable deciduous shrubs. However, there seem to be relatively few varieties

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	Pend. ....	.75
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50	Enchantment,	
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that make up the major part of the list. Dogwood, euonymus, forsythia, privet, honeysuckle, mock orange, spiraea, lilac, viburnum and weigela are available in many varieties, and new ones are appearing constantly. It is difficult to test and evaluate these new varieties, but it is certainly worth while, even though only two or three superior ones are found each year. As landscape architects, we are depending upon you to supply us with new varieties of plants so that we may give our clients the benefit of recent research in this field.

A great deal could be said about vines, roses and perennials, but they are less important in the over-all picture and must be neglected in this discussion.

### KILLING WEEDS.

[Continued from page 11.]

dosages of more than fifty gallons per acre. Similar sprayings made June 24 on trees of the same age showed no significant mortality from treatments of 100 or less gallons per acre. First-year Norway pine sprayed with 100 gallons per acre in late May suffered no increased mortality or appreciable oil burning. This species was much more oil-resistant than white spruce.

Tests also showed that sprinkling the seedbeds with water immediately before application of 150 gallons per acre of mineral spirits in July or August reduced oil burn on first-year jack pine to about one-third of what was observed in unwatered beds similarly oil-sprayed.

In another test run in mid-August, where spraying of first-year jack pine was done in the evening with seventy-five gallons per acre, only 0.6 per cent of the trees showed any oil injury, whereas daytime spraying injured 4.6 per cent. A third test using 100 gallons per acre on the same age class of trees July 12 to 14 showed 23.7 per cent of the trees with some oil injury (needle browning) when sprayed on a warm day, while on a cooler day only 2.2 per cent of the trees showed slight oil burn. These techniques of minimizing damage to the trees may be worth trying on species found sensitive to the oil sprays.

In order to provide nurserymen with a guide to safe dosages of mineral spirits, the accompanying table, based on experimental results and other published reports, has been compiled. It is designed for oil spraying in the daytime in reasonably cool weather, preferably when air temperatures are under 75 degrees Fahrenheit. If oil spraying is done on cool nights or where beds are watered just before application of the oil spray, the dosages shown in the table

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could probably be exceeded by as much as twenty-five per cent with negligible injury to the trees. In making the table, relatively more weight was given to probable tree mortality from a given treatment than to slight temporary needle browning or other damage on new growth which might occur, but from which the trees might quickly recover within several weeks.

Experiments by F. M. Cossitt, United States forest service, in nurseries growing southern species, such as loblolly pine, longleaf pine and shortleaf pine, indicate that successful weeding with little or no injury to trees can be obtained from treatments approximately as given for group III in the table. Generally, treatments of more than fifty gallons per acre are not required on southern pines, providing the weeds are sprayed when small.

The mineral spirits sprays have been used extensively by E. J. Eliason at the Saratoga forest tree nursery, in New York. They have proved satisfactory there on most pines and spruces, but Mr. Eliason reports that tamarack and larch were injured severely by the average dosages tolerated by most of the pines.

As more experimental evidence and data are accumulated, there will no doubt be many more species added to the list.

Will the oil sprays cause any damage to the soil? The soils experts and other experiment station personnel say "no." The mineral spirits are highly volatile, evaporate within a few hours after application and leave practically no residue in the soil.

Mineral spirits are inflammable, but not explosive. They are rated similar to kerosene by fire insurance underwriters. No smoking should be allowed by any personnel handling or spraying the material, and engine exhaust outlets should not be too close to the spray vapors. Care should be used in storage of the material; it should be kept away from buildings with machinery, records or other valuable contents, if possible. By following a few safety rules, the mineral spirits are quite safe to handle. They are hard, however, on ordinary rubber hoses and leather gaskets. Neoprene is more oil-resistant. Washing out the sprayer equipment with a strong soap or dairy cleanser immediately after use will prolong life of the hoses and gaskets.

SOLE owner of Chimo & Oliver, Fresno, Calif., is now G. C. Oliver, who has renamed the firm Oliver's Flower Shop & Nursery.

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CLARENCE KONARSKE has opened a 2-acre retail nursery at 24638 West road, Flat Rock, Mich.

PARTNERS in the newly organized 221-acre Fairlawn Landscape & Nursery Co., Radford, Va., are Hank Stumpf and E. B. Linkous.

A CAMELLIA show was held March 19 to 21 by Tuttle Bros. Nurseries, Altadena, Calif. Cut flowers of eighty camellias were displayed in the firm's new glasshouse.

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GRAFTON LONGDON, JR., a landscape gardener, has started Terrace View Gardens at Greencastle, Ind. He has two greenhouses and plans to specialize in chrysanthemums and other hardy perennials.



**SAN JOAQUIN MEETING.**

After a dinner at Mowers restaurant, Modesto, Calif., the February meeting of the San Joaquin chapter of the California Association of Nurserymen was called to order by President G. C. Oliver, Oliver's Flower Shop & Nursery, Fresno. All business was omitted to allow time for the program.

Members then went to the agricultural laboratories of the Shell Chemical Co., at Salina, where Mason Turner, of the Shell company, introduced Dr. Roy Hansberry, director of the laboratories. He welcomed the group and gave a summary of the aims of the company. Frank B. Hurbert, senior horticulturist, spoke on weed control, and Dr. Van Overbeek discussed the sugar cane and pineapple industries in the Hawaiian islands, showing movies to illustrate his talk.

Members then inspected the test projects being carried on in the greenhouses and laboratories of the Shell company.

Virgil Cripe, Sec'y.

**LANDSCAPE GROUP ELECTS.**

Arthur G. Barton, Glendale, was elected president of the Southern California chapter of the American Society of Landscape Architects March 15. Other officers chosen were Garrett Eckbo, Los Angeles, vice-president; Virginia Russell, Long Beach, secretary-treasurer, and Herbert Kopp, Los Angeles, recording secretary.

Ruth Shellhorn, South Pasadena, and Fred Barlow, Jr., Los Angeles, were named members of the executive committee.

**CALIFORNIANS ON RADIO.**

Five southern California nurserymen were interviewed March 2 by Norvell Gillespie, garden editor of the San Francisco Chronicle. Recordings were made to be broadcast March 4 and 18 on Mr. Gillespie's program, "Garden Guide of the Air," presented at 6:30 p. m. each Friday over KHJ and other Mutual Don-Lee network stations in California.

Paul Moulder, Moulder Bros., Glendale, told about the California international flower show being held March 26 to April 3 at Hollywood park race track, Inglewood. Nurserymen interviewed on other subjects included F. C. Tomlinson, Select Nurseries, Whittier; James Perry, Gold Medal Plants, Inc., Los Angeles; Robert Weidner, Buena Park, and William Wilkerson, Better Gardens, San Marino.

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#### CATALOGS RECEIVED.

Adams Nursery, Inc., Westfield, Mass.—Wholesale descriptive price list of evergreen and deciduous trees and shrubs, fruit trees, vines, roses, perennials and supplies; 60 pages and cover, 4x8 1/4 inches, and wholesale catalog of evergreen and deciduous trees and shrubs, fruit trees, vines, roses, perennials and supplies, illustrated, partly in color; 48 pages and cover, 7 3/4 x 10 1/2 inches.

Bergeson Nursery, Fertile, Minn.—Wholesale catalog of shade, ornamental and fruit trees; evergreens, shrubs, roses, perennials and small fruits; 20 pages and cover, 3 1/2 x 8 inches.

Berryhill Nursery Co., Springfield, O.—Wholesale price list of evergreens, shade and ornamental trees, shrubs, roses, vines, lining-out stock and supplies; 12 pages and cover, 4 1/2 x 8 inches.

Flor-Acres, Bridgman, Mich.—Wholesale descriptive price list of perennials; 4-page folder, 4x8 inches.

McIninch Greenhouses, St. Joseph, Mo.—Wholesale descriptive price list of chrysanthemums and evergreen liners; 8 pages, 4 1/4 x 9 inches.

Mount Arbor Nurseries, Shenandoah, Ia.—Wholesale descriptive price list of fruit and shade trees, roses, evergreens, ornamental shrubs, vines, perennials, bulbs and small fruits; 72 pages, 6x9 inches.

Paulsen Nursery, Minden, Neb.—Wholesale catalog of shade trees, ornamental shrubs, evergreens, perennials, annuals, berry plants, vines and bulbs, 24 pages, 4x8 inches.

Payne Dahlia Farms, Kansas City, Kan.—Wholesale catalog of summer-flowering bulbs; illustrated in color; 6-page folder, 9x10 1/4 inches.

Pine-Croft Nurseries, Exeter, N. H.—Wholesale descriptive price list of hardy perennials, roses, flowering shrubs, berry plants, small fruits, bulbs and seeds; 4-page folder, 8 1/2 x 11 inches.

E. D. Robinson Sales Agency, Wallingford, Conn.—Wholesale price list of lining-out stock; 4-page folder, 4 1/2 x 11 inches.

W. T. Smith Corp., Geneva, N. Y.—Wholesale price list of ornamental trees and shrubs, evergreens, fruit trees and small fruits; 16 pages, 4x9 inches.

Tingle Nursery Co., Pittsville, Md.—Wholesale descriptive price list of evergreens, perennials, fruit trees, small fruits and supplies; 36 pages and cover, 4x9 1/2 inches.

Willis Nursery Co., Ottawa, Kan.—Wholesale descriptive price list of flowering shrubs, shade trees, evergreens, hedge plants, roses, vines, perennials, bulbs, ornamental and shade tree seedlings, lining-out stock, fruit trees and small fruits; 24 pages and cover, 5 3/4 x 9 inches.

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**CANADIAN MEETING.**

[Continued from page 10.]

although currents of air are beneficial  
in all houses.

It is hard to obtain expert labor  
at a reasonable price, and the mist  
system is effective in eliminating the  
careful attention to detail, said Pro-  
fessor O'Rourke. With this system,  
watering is not required often, and  
there is little trouble with fungus  
diseases.

Professor O'Rourke discussed the  
use of vermiculite as one easy way  
to obtain a sterile product as a bench  
medium. He showed pictures illus-  
trating the excellent rooting of vari-  
ous plants in vermiculite as compared  
with the rooting in sand. In using  
vermiculite it was necessary to ex-  
periment to decide what size or grade  
would be best. Professor O'Rourke  
warned that vermiculite should be  
poured into the bench rather than  
pressed or pounded and that water  
should be poured in a stream until  
it pours out of the bench. He con-  
cluded his talk with a discussion of  
sphagnum moss and the good results  
obtained in growing holly in it.

When Dr. Shoemaker was asked to  
speak on the nursery work in the de-  
partment of horticulture at Ontario  
Agricultural College he called upon  
four members of the staff who were

present to tell briefly what they were  
doing to further the nursery indus-  
try.

Dr. Truscott said he had been  
treating various kinds of cuttings,  
working to control pH, experiment-  
ing with rooting media and germina-  
tion of seeds and spending a good  
deal of time on storage problems.

Professor Ralph Goodwin-Wilson  
said his major work was in the flo-  
rists' industry, testing samples of soil.  
He suggested that nurserymen test  
their soil more than they had in the  
past.

Discussing pruning and planting,  
John Weall suggested that more  
thought be given to the natural set-  
ting of shrubs and trees in landscape  
work.

J. C. Taylor spoke of his activities  
in breeding lilies, maintaining collec-  
tions of popular plants, working with  
gladioli and working in the test gar-  
dens. The afternoon session ended  
after the showing of a film, "A  
Spring Season at Cloverset," through  
the courtesy of Cloverset Flower  
Farm, Kansas City, Mo.

President McConnell acted as  
chairman of the banquet held Thurs-  
day evening. Following a program  
of professional entertainment, Rich-  
ard P. White, executive secretary of  
the American Association of Nurs-  
erymen, spoke on the value of trade  
organizations, saying that they are  
essential in these days of confused  
and complex world economics. Or-  
ganizations impose on their leaders a  
moral responsibility for righteous  
conduct and sound economic leader-  
ship for the welfare of all. Wise  
leadership builds for the future, and  
the respect which a group receives  
today will determine its value to the  
industry and community tomorrow,  
he continued.

In conclusion, Mr. White said,  
"Next to your bank account and your  
credit, your trade association is your  
best asset. Membership in a trade  
organization does not cost—it pays."

When the session opened Friday,  
Professor O'Rourke spoke on new  
methods and materials of interest to  
nurserymen, illustrating his talk with  
slides. Because cost is one of the  
chief factors in production, he  
stressed labor-saving devices to cut  
down labor costs. He considered  
2,4-D the chief chemical of value,  
although more must be known about  
its effect on nursery stock. TCA  
was another new chemical men-  
tioned as having possibilities for use  
in the nursery.

W. R. Leslie, superintendent,  
Dominion experiment station, Mor-  
den, Man., was the other speaker for  
the morning session. He discussed

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24. The Formal Garden
25. The Formal Garden Plan
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the new varieties introduced at his station and showed pictures of them. Emphasizing the value of color in stock, he predicted that the rosy bloom crab apple would be one of the most salable and popular shrubs during the next few years.

"Horticulture Education in Connection with the Parks Department" was the subject of an address for the afternoon session presented by Major Liddell, of the Niagara parks department. The school for gardeners at Niagara Falls was started in 1936 to train gardeners for the parks. The curriculum at the school is seventy per cent practical and thirty per cent academic. The course takes three years, and entrance requirements are three years of secondary training and a horticultural background. There are no fees; room and board are free, and pocket money is given to students. Recently a cost-of-living bonus was granted. Twenty-four men are enrolled in the school at one time, with eight new students admitted each year. The school tries to turn out 20 to 25-year-old men with basic gardening training. Because the parks department is not able to absorb all the young men, Major Liddell suggested them as good workers and salesmen for nurseries. He stressed that keen young men are invaluable to a firm, but that incentive must be given them.

Dr. E. F. Palmer, Vineland experiment station, Ontario, told of the number of new varieties of fruits that are available, pointing out that in the United States and Canada there are seventy experiment stations having active fruit-breeding projects. Prior to 1920, 499 varieties were introduced, 814 more from 1920 to 1939 and 221 from 1940 to 1947, bringing the total to 1,534 varieties.

These seventy stations anticipate 502 probable introductions in the 5-year period 1948 to 1952, he continued. About twelve per cent of the introductions in the period prior to 1920 justified their existence. In the middle period 1920 to 1939, the percentage of successful introductions rose to 28.7. For the 1940 to 1947 period the tentative figure is 44.8 per cent. This figure represents ninety-nine varieties out of a total of 221 introductions. Dr. Palmer pointed out that adequate preintroduction testing was important and that it was encouraging to note that experiment stations were making serious efforts to carry on thorough testing. In conclusion, he told of the results of tests with many of the varieties of fruits at the Vineland station.

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Parathion was discussed in detail by W. A. Ross, chief of fruit insect investigations, department of agriculture, who regarded it as a potent insecticide with great promise because it killed insects by contact, by digestion and by fumigant action. With the exception of lime-sulphur and Bordeaux mixture, it is safe to use with most spray materials. Combining Parathion with oil was not recommended. Most plants were said to be uninjured by Parathion, although last year it caused damage to the foliage and fruit of apples. McIntosh reds were particularly susceptible to Parathion injury.

In Canada Parathion is sold only as fifteen per cent wettable powder and in aerosol bombs. The latter are sold only for the control of greenhouse ornamentals; Parathion is not for vegetables. It has proved effective for red spiders, aphids, lice, green flies, thrips, cockroaches, rose leaf tiers, cyclamen mites, mealy bugs and sow bugs. Mr. Ross warned that it was extremely poisonous to men and animals and that every precaution should be taken when using the material.

The fifteen per cent wettable powder has been used for control of orchard pests, but no work has been done with it on ornamental stock. Mr. Ross warned that Parathion should not be used on fruits the month previous to their harvest.

Although DDT was considered a remarkable insecticide by the speaker, he blamed it for making mite a problem in orchards. Benzene hexachloride had made little headway because it imparted an objectionable flavor to fruits. Chlordane was said to have little effect on fruit tree pests, but some effect on soil insects. Mr. Ross predicted that in the next few years DDT and Parathion would be used most extensively in orchards.

Following the technical sessions, a short business session was held. The report of the resolutions committee was brought forward by John Connon, and all resolutions were adopted. Although members agreed in principle, there was some discussion on the wording of a resolution proposing that the government stations be requested not to give out free planting material for individual purposes other than for reforestation.

A. B. Luke, Luke Bros., Ltd., Montreal, Que., in presenting the standards committee report, stated that the nurserymen of Canada would adopt the grading standards of the American Association of Nurserymen as far as they affected Canada. Since the A. A. N. has revised its grading standards, it was suggested

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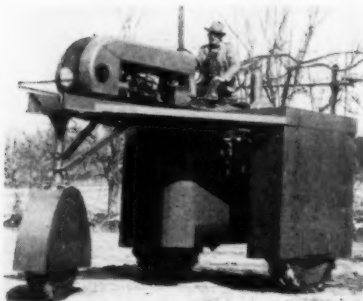
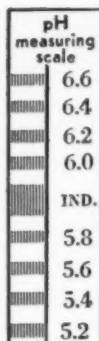
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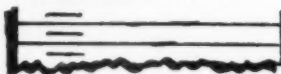
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that these be referred to the committee for perusal and recommendation.

It was unanimously decided to extend an invitation to the A. A. N. to hold its annual meeting at Toronto in 1952.

### APPLE TREE PROBLEMS.

[Continued from page 7.]

do the wrong thing. A little study before cutting will help one to do well.

#### Some Apple Tree Diseases.

Black rot canker is often seen in nurseries as well as in orchards. It is a fungus disease with different manifestations (see figures 4 to 9), which makes it a little confusing to one not familiar with the malady in its life cycle. When the fungus affects twigs and branches, it is called canker; when on the leaf, it is called frog-eye, and when on the fruit, it is referred to as black rot—a dried, hard, wrinkled and shriveled specimen called a mummy. Each of these manifestations is connected, and they are simply different stages with exterior signs of the disease in the life of the fungus, *Sphaeropsis malorum*. The fungus may live over the winter on cankered limbs, on the old leaves or even in the mummified fruit.

The leaf spot disease is most common in nurseries, where it begins to show soon after the leaves unfold. It first appears as minute purple specks, which enlarge to nearly circular spots with faintly raised margins; the area turns brown, becomes a dirty gray and displays minute black fruiting bodies containing spores. The centers of the areas become light-colored with darker margins; hence the name frog-eye, with a series of concentric crevices over the area, as shown in figure 9. Summer strength of sulphur sprays will control this disease on foliage. One or two applications, one before blossoming and one after, will control frog-eye.

Canker on twigs or on limbs, shown in figure 4, needs to be cut out and burned. It may be spread by pruning tools. Canker also may be spread in grafting. Affected fruits in the nursery or on near-by mature trees should be gathered and buried. It is well to be on guard against the spread of canker on nursery trees as well as on trees in near-by orchards. A district that is clear of canker and kept clean is a boon to the nurseryman. Furthermore, orchardists will welcome the fact, if it be so, that a given nursery is clear of canker as well as of other disorders.

Twig blight is common on apple,

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pear and quince trees in the nursery. The rapid growth of small trees with long whips is favorable for blight. Twig blight is a highly contagious disease. It is caused by a bacterium known to pathologists as *Bacillus amylovorus*, a microscopic form of great virulence under favorable conditions for infection and growth. It kills plant tissue rapidly. Tolman Sweet apple trees, Bartlett pear trees and Champion quince, among many others, are quite susceptible to the disease. A blighted twig is illustrated in figure 10, where the tip leaves are black, the midway ones brown and the basal ones nearly green but pale in color. The bark is dead and shriveled. A blighted spur and a dead pear and an elongated scar on a trunk where infection has occurred and where the blight may winter over are shown in figure 11. The inner bark, or cambium tissue, is a good feeding place for the bacillus of blight. Infected twigs or scars, upon examination with a knife, will show the tissue to be discolored, sticky and pale pink in color, for here the bacteria abound.

The infectious nature of blight prompts the idea of precise sanitation. First of all, it is urgent that all portions of a blighted tree in the neighborhood be destroyed, so that



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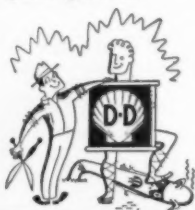
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bees and other insects will not get to them and spread the disease, for blight is a gum disease and is most abundantly spread by bees. Consequently, it is important that all blight be cleaned out before the trees bloom. Other creatures, such as leaf hoppers and aphids, may spread blight throughout the summer. Affected twigs in the nursery should be cut out and burned, and all cuts should be cleansed with an antiseptic, so that the blight may not enter the wounds. A good sterilizing solution can be made by combining one-half per cent of potassium iodide and one per cent of iodine in denatured alcohol, fifty per cent strength, kept corked to prevent weakening. Swab all cuts to cleanse them.

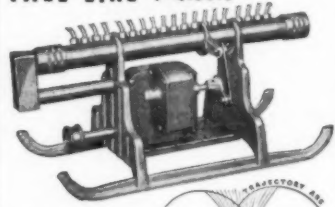
Cedar apple rust, *Gymnosporangium juniperi-virginianae*, is likely to be a problem in the apple nursery if red cedar trees are grown within or near the nursery, and even more of a problem if wild thorn or any species of crataegus are cultivated or grown on near-by property, for the crataegus is a host to the rust and is as susceptible to it as the apple tree. Apple rust is a 2-host disease, as the fungus requires two hosts and alternates from one to the other to continue its life history. So, wherever red cedar, apple or crataegus trees are grown, one may expect the cedar apple rust to occur.

The fungus causing the cedar apples on red cedar trees, shown in figure 18, winters on the cedar, forming rounded or oblong structures which are brown in color. In spring they form the spores that spread the fungus to apple trees. A rusted apple with a roughened surface bearing little prickles is shown in figure 19, and rust, with its little curved protuberances, is shown in figure 20. The two means of control are cutting the little cedar apples from the cedar twigs and spraying the apple and the crataegus with fine sulphur twice after blossoming time at 10-day intervals. All neighborhood trees need the same treatment if within one-half mile of the nursery. Dooryard cedar trees are a menace to apple trees in the vicinity. Constant vigilance is the only sure way to freedom from rust. If incipient cases are detected and controlled at once, much labor and loss may be averted.

Apple scab, *Venturia inaequalis*, is a fungus disease causing black spots on the foliage in midsummer and later occurring in nurseries on small apples. It is most abundant in wet seasons on vigorous leaves. A recent discovery that scab may live over the winter on bud scales and on new twigs, shown in figure 32, re-

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veals how this disease may be spread on nursery stock. In the main, however, the scab fungus passes the winter in the nursery and orchard on the old leaves and reappears the succeeding season on the new leaves. The black spots on apple leaves in the fall contain the spores enclosed within spore cases, as shown in figure 31, the contents of which are released during wet weather as growth starts in spring. The scab fungus in the spore stage is an air and water-borne disease. The little fruiting cases of spores explode like minute torpedoes, expelling the germs into the air, where they may be caught and carried by air and water currents and thus spread the fungus.

Olive-brown, clustered apple scabs on leaves appear first as small green spots, a fuzzy growth, but soon become larger and irregular in outline. They are often variable in size and eventually become black and hard. Control of scab in the nursery and orchard can be secured, although complete extermination of it never seems to be possible. The scab disease is generally bad in wet seasons, especially if there is much holdover from the preceding season. Early applications of almost any of the sulphur sprays are needed both before and after blossom time. Failure to spray or dust early usually results in failure to control scab. Sprays and dusts forestall and prevent infection; they do not cure it. Orchardists have learned this important lesson after much experience and expense. They need not do so any more; neither need the nurseryman, in view of what we now know about apple scab.

Crown gall is not uncommon in nurseries. It is chiefly a nursery disease and commonly affects apples, peaches, raspberries and roses. It is caused by a bacterium known as *Pseudomonas tumefaciens*, because it forms tumors, or galls, on roots and stems. This disease is easily recognized by the presence of wartlike

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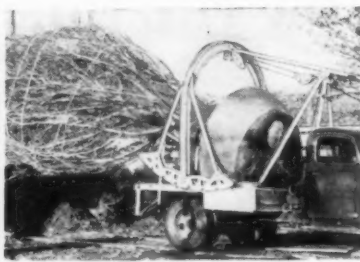


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growths of various sizes which are found most frequently on the stem near the surface of the soil, but sometimes are seen on the trunk or deep down on the roots.

The organism gains entrance into the plant through wounds, and infection at the place of graft or budding is common. On small plants, the galls do considerable damage by restricting growth and distorting the plant at the point of infection, weakening it there. The first slight swelling increases rapidly, changing from a light-colored soft tissue to a dark brown, hard, woody, irregular outgrowth. When the gall decays, it releases immense numbers of bacteria, which can live in the soil for about one season.

Crown gall may be controlled by planting disease-free stock, inspecting stock thoroughly and discarding all affected plants at digging time in the nursery. Land that has grown plants afflicted with crown gall should be used for other cultivated crops for two or three years. Apple trees that have galls on their roots need not be killed, but they are unhealthy and less valuable.

Apple blotch, *Phyllosticta solitaria*, is a fungus disease somewhat similar to apple scab, as it causes blotches on leaves and fruit, and on twigs. It is less widely spread than scab, as it occurs largely in the southern and central states, but does infest trees in nearly one-half the apple-producing area of the country. It is said to damage from five to ten per cent of the crop, or 5,000,000 bushels of apples. Apple blotch spots and cracks the fruit, spoiling its appearance and, therefore, its value. It may girdle and kill fruit spurs.

The first appearance of blotch is indicated by tiny brownish specks, which become larger and darker as they grow. They may be seen on the leaves in early June. Later the spots become somewhat star-shaped with irregular margins. In severe infestations the trees may be partly or nearly defoliated. Water sprouts and tender shoots, as in the nursery, may be infected. They become dark in color and rough. All of these parts should be cut out and destroyed. Control of blotch can be had by spraying with Bordeaux or lime-sulphur in early June.

### Problems with Insects.

Oyster-shell scale, *Lepidosaphes ulmi*, often called bark louse, is of common occurrence on small trees. It may occur on the leaves, as shown in figure 14, but more commonly on the twigs, as shown in figure 1. The shape of the insect indicates the rea-

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son for its name. The bark louse is one-fourth inch or more long, dark brown in color and similar to the bark to which it attaches itself with tenacity. An exterior view is shown in figure 16, and an interior view in figure 15, the latter displaying many eggs, perhaps nearly 100 under one shell. These creatures mate once a year, giving one generation each season, and if nearly all the eggs hatch and survive, the original adults may produce seventy-five to 100 lice. These insects injure plants by sucking out the juice underneath the bark. Twigs are often killed by starvation, and occasionally whole trees will die if the bark lice become abundant.

Nursery stock is supposed to be free of the bark louse, but it is seldom entirely free from it. One may easily be misled by seeing the dead scales on older branches on the trunk. Dead scales will be dry and brown on the inverted side, while live ones will show minute eggs that are white or yellow in color. A hand lens will reveal the dead or living condition. Miscible oils or dormant lime-sulphur will kill the creatures. Applications need to be made in late fall at the time of defoliation or later, or in early spring before the buds open.

The European red mite, *Paratetranychus pilosus*, may occur in any

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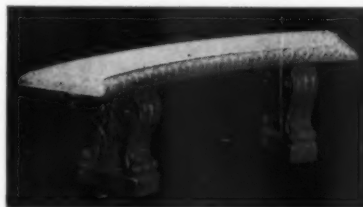
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nursery or it may be introduced on bud sticks or on scions and may spread from infested trees during the motile stage. The red eggs shown on twigs, in figure 21, are conspicuous enough on account of their color to be seen easily or to be casually overlooked. They are most abundant near the base of a year's growth or between 1 and 2-year-old twigs. They are clustered and close together and firmly attached to the twig. Two detached eggs with appendages are shown in figure 22, and a newly hatched nymph is shown in figure 23, and a fully grown adult in figure 24. The surface markings, hairs, legs and lines are characteristic of the creature. Oil sprays for the eggs are preferred in early spring before the buds open. It is well to inspect all scion and bud sticks before using them to see that they are free of mites.

The rosy apple aphid, *Anuraphis roseus*, shown in figure 26, is injurious wherever it occurs in abundance, and it may be a recurring pest. It hatches from eggs laid on the twigs, as shown in figure 28, where they winter. A young bug of this species is shown in figure 29, and the distorted and rolled leaves are indicated in figure 27, while a scarred apple is shown in figure 30. Control is to be had by the use of dormant lime-sulphur or miscible oil when there are no leaves on the plants, or in midsummer, by a spray of nicotine sulphate, Black Leaf 40, one pint to 100 gallons of water. It is necessary to drench the trees to give an effective treatment.

## PENN STATE CONFERENCE.

[Continued from page 12.]

Nursery Materials and Their Control." He first discussed insecticides, grouping them according to their general uses. The DDT group, composed of DDT, DDD and methoxychlor, was described first. DDT has been used for several seasons, and the method of use either as a spray or dust is standardized generally. DDD is similar to DDT and is sold as a fifty per cent powder under the trade name, Rothane. Its chief advantage over DDT is that it is less toxic to humans. Methoxychlor is less toxic to tender plants. However, at the present time it is expensive and not of much use to nurserymen.

The second group was composed of Chlordane and benzene hexachloride. Benzene hexachloride has a strong, musty odor which persists for a long time in the soil and often is absorbed by the plants; this is par-

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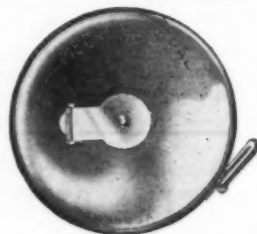
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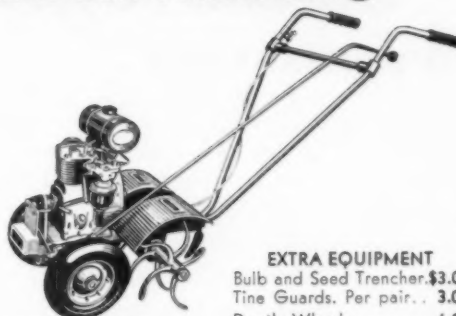
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ticularly objectionable with edible crops. It has shown good control for galls and aphids. Chlordane is promising for use by nurserymen. It is competing with DDT for controlling grubs.

A third group, made up of phosphate materials, includes HETP, TEPP and Parathion. Because HETP has proved erratic, poisonous and dangerous to the operator, it is little used. TEPP is still being used and is particularly effective on aphids and soft-bodied insects, such as mealy bugs. It is possible that it will injure plants which are covered with copper. TEPP is also poisonous and will doubtless be replaced with a less toxic material. Of the three in this group, Parathion is least dangerous to the operator. It is safe to use on evergreens, but should not be mixed with Bordeaux. Parathion is effective on aphids and red mites when used at a rate of one-half pound wettable powder to 100 gallons of water and followed by a second application in eight to ten days.

A new material not yet available is known as No. 497. Its potency is somewhere between DDT and Chlordane, but it is claimed to be more powerful than DDT.

The second part of Professor Gesell's talk was on the control of



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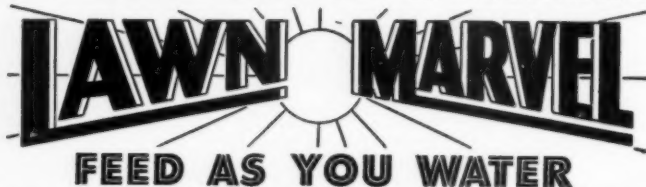
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specific insects. He recommended fifty pounds of fifty per cent DDT per acre for Japanese beetle grubs. This would be about one pound to 1,000 square feet. The material should be put on with much water. It may be sprayed on, but unless well saturated may cause death to birds. One application has proved effective for from four to five years and can be given any time when the soil is not frozen. It will take about three weeks to kill grubs. A new control for grubs is Chlordane. It is used at the rate of twenty pounds of fifty per cent Chlordane per acre and may be sprayed on or mixed with sand and applied dry. For smaller areas one-half pound to 1,000 square feet is recommended. It works much faster than DDT, and tests show it is effective for at least three years. Longer tests may prove that it is effective for a longer period.

For leaf miner, four pounds of fifty per cent DDT to 100 gallons of water may be applied about May 1. On arborvitae the DDT should be sprayed about May 15. Benzene hexachloride might give better control, but the strong, musty odor, which lasts from three to four weeks, is usually an objectionable factor.

Scales can be controlled by three per cent miscible oil. Summer sprays should be applied as the insects are hatching, using one quart nicotine and two quarts summer spray oil to 100 gallons of water. Spruce aphid and spruce gall aphid attack about the same time, when growth is beginning. The nicotine and summer oil solution is the best control for them.

Spittlebug on evergreens and other plants can be controlled with two pounds of Chlordane to 100 gallons of water, applied early when the insect is first noticed. On strawberries the spittlebug may be controlled by spraying with Chlordane two weeks before blossoming. Just at blossoming time two pounds of DDT can be used.

The control for lace bug is two pounds of DDT, but this should not be used on English elms. For red spider on evergreens and other plants, wettable sulphur at the rate of ten pounds to 100 gallons of water gives fair but not 100 per cent kill. Rote-none also gives fair results, and Parathion probably is best, used at a rate of one-half pound to 100 gallons of water.

Elm leaf beetles may be sprayed with DDT with good results. Japanese beetles also may be controlled with two pounds of DDT to 100 gallons of water. For bagworms, from four to six pounds of arsenate of lead is still probably the best ma-



terial. Parathion is most effective on mealy bugs.

#### Wild Flowers.

A. F. W. Vick, Jr., Vick's Wild-gardens, Narberth, Pa., spoke on "Wild Flowers for Gardens," discussing wild flowers and plants which are not appropriate for all types of homes or gardens but are particularly effective in a natural setting. In planning such gardens an attempt is made to reproduce a scene found in a woods, along a stream or in other natural spots. Stones, logs or any natural materials may be used with the plants to give authenticity to the planting. Mr. Vick illustrated his talk with Kodachromes of a wide variety of wild flowers and plants, as well as of gardens developed with these plants.

#### Rose Varieties.

Results of the experimental work on roses conducted at Pennsylvania State College were reported by R. P. Meahl in a talk on "Selected Rose Varieties," illustrated with Kodachromes. Beds for roses were excavated to depths of eight, sixteen and twenty-four inches, and eight different soil mixtures were placed in these beds. They were all planted with the variety Grenoble. Plants in the beds twenty-four inches deep gave a higher average flower production than those in either 16 or 18-inch beds, and those in the 16-inch beds gave higher production than those in the 8-inch ones. However, it was interesting to observe that the greatest loss of plants from winter-killing also occurred in the 24-inch beds, with the next greatest loss in 16-inch beds and the least in the 8-inch beds. Considering the various soil mixtures without regard to bed depth, it was found that the soil composed of one-half loam, one-quarter manure and one-quarter Hyper-Humus gave the highest average production. Here, too, however, the highest winter injury, as shown by plant loss, occurred. A possible explanation was offered, that the plants with the most favorable bed and soil preparation gave the highest production but grew so vigorously that they failed to harden and mature for winter.

From the results of hybrid tea rose variety trials, Professor Meahl listed according to color several varieties which had given the best performance in flower production, quality and length of stems for cutting.

Among the white varieties, Mme. Jules Bouche yielded the greatest average number of flowers; Neige Parfum gave the greatest number of cuttable flowers, and Blanche Mal-

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lerin grew tallest. Mrs. Pierre S. du Pont had the most flowers of the yellow varieties; Golden Dawn had the most cuttable flowers, and Soeur Therese was tallest. Of the blends and bicolors, Ramon Bach yielded the greatest average number of blooms, with President Herbert Hoover giving the greatest number of cuttable flowers and Signora attaining the greatest height.

Warrawee led the pink types in the number of flowers, and Dorothy James and Elite led in the number of cuttable blooms. Elite and Radiance grew tallest. Among the red varieties, Crimson Glory was proved to yield the greatest average number of flowers, with Grande Duchesse Charlotte first in the number of cuttable flowers and Red Radiance the best variety as far as height was concerned.

Professor Meahl illustrated his talk with Kodachromes of the rose varieties he discussed.

**Banquet.**

In the evening an informal banquet was held, with R. E. Larson, department of horticulture, Pennsylvania State College, as toastmaster. The speaker for the evening was P. F. English, of the college's department of zoology and entomology, who spoke on the problems involved in the management of small game as well as the larger types, such as deer and bear. He showed color films of some of the game animals of Pennsylvania.

**Beekeeping.**

The first speaker on the program for the last day of the conference was E. J. Anderson, also of the department of zoology and entomology, who spoke on "Beekeeping as a Nurseryman's Side Line." Professor Anderson said that for a person to be successful with bees, he must be adapted to beekeeping and should not mind a few stings now and then. Before starting in beekeeping on a large scale, a few colonies should be tried. The approximate cost of starting will be around \$20 per colony if all new equipment is obtained.

The returns from bees will vary from year to year, depending on the honey crop and the price. At the present time, if one obtains an average of seventy pounds of honey per colony, the net profit should be about \$10 per colony. In some areas where fruit orchards are prevalent, the bees may be rented out to aid in pollination of the fruit. A fee of \$4 per hive is usual. In selling the honey, retail methods are preferred over wholesale. If roadside sales

areas are maintained, the retailing of the honey will work in well.

Beekeeping is a seasonal business, but must not be neglected, for the bees work on schedule. One must catch the honey flow at the right time or he will not get it. In management, large hives may be used to cut down on labor. The queen's wings may be clipped to prevent swarming. The hives should be on scales so that one can determine what is taking place inside. If the hive is gaining one-half to two pounds per day it means swarming season. If there is a gain of from five to twelve pounds per day, a new super will soon be needed. This should be added when weight increases by thirty pounds. Professor Anderson concluded his talk with an explanation of the life of a honeybee.

#### Development of Farm Ponds.

"The Development of Farm Ponds" was the subject of a talk by C. H. Bingham, specialist in agricultural engineering extension. He said that farm ponds, if properly constructed, would supply water for fire protection, livestock, spraying and irrigation, as well as for recreational purposes, such as fishing, swimming, boating and skating. Pond areas of from one-quarter acre to five acres are large enough to serve these purposes, and a 16-foot dam is sufficient. Ponds may be made at one side of a stream channel, may be fed by springs or may be fed entirely by surface runoff.

The location of the pond will depend on the topography of the land. Not all places lend themselves to the building of ponds. The dam site and pond basin should have a tight subsoil. Tight clay bottoms make good foundations for pond basins and provide good material for building dams. Peat and muck deposits should not be used. The natural ground slope at the selected site should not be so steep that an excessively high dam is needed to provide adequate pond surface, nor should the site be so flat that the excavation necessary to get proper waste depth would make it impossible to drain the pond. It is best to select a site where the cubic yards of excavation from the basin about equal the amount needed for building the dam. At least one-third of the pond should be eight feet deep or more.

The earth dam should be at least three feet above the normal water level and should be at least six feet across at the top. The slope on the water side should be three to one and on the dry side two to one. Before the dam is built, a trickle tube

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should be laid to take care of the normal overflow from the pond. This tube also can be used to drain the pond. For heavy flows of water a grass-sodded spillway should be provided at one end of the dam.

The concluding talk of the conference was "Maintaining Soil Fertility," by A. E. Cooper, department of agronomy, who said the factors of soil fertility can be likened to a 3-legged milking stool. If one leg fails, the stool falls. The three main factors are lime, organic matter and mineral elements. Lime serves to encourage good bacterial action and is a means of maintaining desirable soil condition. Organic matter is important, especially when growing B&B stock, in which the soil is sold with the plants. It takes about one and one-half pounds of nitrogen to produce one bushel of shelled corn or 150 pounds for 100 bushels per acre. If 4-12-4 fertilizer is added in the usual amount, about twenty pounds of nitrogen are added. This extra nitrogen comes from the organic matter. Thus, about 130 pounds more of nitrogen are needed for the corn crop. The same principles apply with nursery material. Organic material affects the mechanical condition of the soil, making it easier to work, more friable and tillable. It also increases the water-holding capacity. The mineral elements are provided by fertilizer.

In building up the production level of nursery crops, Professor Cooper suggested taking the soil out of production and growing sod cover crops. On first consideration it might seem that a nurseryman could not afford to do this, but examples were cited where, by stripping and using sod, the Andorra Nurseries, Conshohocken, Pa., were able to reduce the time of producing a nursery crop from four years to two years.

A NEW lawn and garden supply store was opened recently at Woodbine, Md., by E. Williar Pickett, Pickett's Nurseries.

ARTHUR F. PAUL, president of Andorra Nurseries, Conshohocken, Pa., was elected to a 3-year term on the Whitmarsh township zoning board of adjustment at a recent meeting of the township board of supervisors.

THE BLOSSOM SHOP, Tucumcari, N. M., has been purchased by Mr. and Mrs. Paul Ball from Mr. and Mrs. R. M. Jones. Mr. Ball, a horticultural graduate, formerly taught agriculture at Taos and did landscaping work for Eastern New Mexico College.

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